PLANNING COMMISSION AGENDA

CHAIRPERSON:
Adam Peck

VICE CHAIRPERSON:
Mary Beatie

COMMISSIONERS: Bill Davis, Charlie Norman, Chris Tavarez, Mary Beatie, Adam Peck

MONDAY, JULY 22, 2024
VISALIA COUNCIL CHAMBERS
LOCATED AT 707 W. ACEQUIA AVENUE, VISALIA, CA
MEETING TIME: 7:00 PM

1. CALL TO ORDER –
2. THE PLEDGE OF ALLEGIANCE –
3. SWEARING IN OF PLANNING COMMISSIONERS –
   - Charlie Norman (1st term)
   - Adam Peck (3rd term)
   - Mary Beatie (3rd term)
4. ELECTION OF CHAIR AND VICE-CHAIR –
5. ROLL CALL
6. CITIZEN'S COMMENTS – This is the time for citizens to comment on subject matters that are not on the agenda but are within the jurisdiction of the Visalia Planning Commission. You may provide comments to the Planning Commission at this time, but the Planning Commission may only legally discuss those items already on tonight's agenda.

   The Commission requests that a five (5) minute time limit be observed for Citizen Comments. You will be notified when your five minutes have expired.
7. CHANGES OR COMMENTS TO THE AGENDA –
8. CONSENT CALENDAR - All items under the consent calendar are to be considered routine and will be enacted by one motion. For any discussion of an item on the consent calendar, it will be removed at the request of the Commission and made a part of the regular agenda.
   a. Finding of Consistency No. 2024-01: A request by Rob Toro of Cal Gold Development to fulfill the request of the Planning Commission to return and demonstrate compliance with the Orchard Walk Specific Plan across the development area's southwest corner's multi-tenant building. The project site is located at the northeast corner of West Riggin Avenue and North Conyer Street (Addresses not assigned) (APN: 078-120-055).

9. PUBLIC HEARING – Josh Dan, Senior Planner

   Conditional Use Permit No. 2024-10: A request by Klassen Corporation to construct a 4-story, 90 room Home 2 Suites Hotel in the Square at Plaza Drive Master Planned development, zoned BRP (Business Research Park). The project site is located at the Southeast corner of West Crowley Avenue and South Neeley Street. (Address: N/A) (APNs: 081-170-028). An Initial Study was prepared for this project, consistent with the California Environmental Quality Act (CEQA), which disclosed that environmental impacts are determined to be not significant with the inclusion of mitigation measures. Mitigated Negative Declaration No. 2024-14 has been prepared for adoption with this project (State Clearinghouse No. 2024061251).

10. PUBLIC HEARING – Colleen Moreno, Assistant Planner

    Conditional Use Permit No. 2024-18: A request by Spectrum Pride to establish a specialized school for individuals with autism spectrum disorder in an existing 4,800 square foot office building. The project site is located at 316 South Dunworth Street in the C-S (Service Commercial) zone (APN: 098-110-054 & 098-101-030). The project is Categorically Exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15301, Categorical Exemption No. 2024-27.

11. PUBLIC HEARING – Brandon Smith, Principal Planner

    Conditional Use Permit No. 2024-16: A request by Costco Wholesale Corporation (Kimley-Horn and Associates, agent) to establish a 159,212 square foot building for the sale of general retail merchandise, a car wash, and a fuel dispensing service station, together with a master sign program, within the C-MU Zone. The site is located at the northeast corner of W. Riggin Avenue and N. Shirk Street (APN: 077-100-108). Environmental impacts associated with this project were previously assessed with the Carleton Acres Specific Plan Project Environmental Impact Report (State Clearinghouse #2021050418), which was certified by the City of Visalia on October 2, 2023, in accordance with the California Environmental Quality Act (CEQA).

12. PUBLIC HEARING – Brandon Smith, Principal Planner

    Conditional Use Permit No. 2024-27: A request by West Star Construction, Inc. to adopt a master sign program associated with a new commercial center, including the addition of wall mounted signs and monument signs that exceed City standards for height and sign area. The property is located within the City's Commercial Mixed Use (C-MU) zone district. The project site is located at the northeast corner of Shirk Street and Riggin Avenue. (APN: 077-100-108 [portion]). The project is Categorically Exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15311, Categorical Exemption No. 2024-38.

13. PUBLIC HEARING – Colleen Moreno, Assistant Planner

    Variance 2024-02: A request to allow a variance from the minimum rear yard setback required in the C-MU (Mixed-Use Commercial) zone for trash enclosure placement. The project is located at 916 West Murray Avenue (APN: 093-243-009 & 093-243-010). The project is Categorically Exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15305(a), Categorical Exemption No. 2024-31.

14. PUBLIC HEARING – Cristobal Carrillo, Associate Planner

    a. **Annexation No. 2024-01:** A request by San Joaquin Valley Homes to annex two parcels totaling approximately 59.13-acres into the City Limits of Visalia. Upon annexation the area would be zoned R-1-5 (Single-Family Residential, 5,000 square foot minimum site area), which is consistent with the General Plan Land Use Designation of Residential Low Density.

    b. **Elliot Tentative Subdivision Map No. 5597:** A request by San Joaquin Valley Homes to subdivide two parcels totaling approximately 59.13-acres into 225 lots for single-family residential use and additional out lots for landscaping and a neighborhood park, to be located within the R-1-5 (Single-Family Residential, 5,000 square foot minimum site area) zone.

    Environmental Assessment Status: An Initial Study was prepared for this project, consistent with the California Environmental Quality Act (CEQA), which disclosed that environmental impacts are determined to be not significant with the inclusion of mitigation measures. Mitigated Negative Declaration No. 2024-05 has been prepared for adoption with this project (State Clearinghouse No. 2024061280).

    Location: The project site is located west of South Roeben Street, approximately 650 feet south of West Tulare Avenue (APNs: 087-010-006, 008).

15. CITY PLANNER UPDATE

16. ADJOURNMENT

The Planning Commission meeting may end no later than 11:00 P.M. Any unfinished business may be continued to a future date and time to be determined by the Commission at this meeting. The Planning Commission routinely visits the project sites listed on the agenda.

For Hearing Impaired – Call (559) 713-4900 (TTY) 48-hours in advance of the scheduled meeting time to request signing services.

Any written materials relating to an item on this agenda submitted to the Planning Commission after distribution of the agenda packet are available for public inspection in the City Office, 315 E. Acequia Visalia, CA 93291, during normal business hours.

APPEAL PROCEDURE

THE LAST DAY TO FILE AN APPEAL IS THURSDAY, AUGUST 1, 2024, BEFORE 5:00 PM

According to the City of Visalia Zoning Ordinance Section 17.02.145 and Subdivision Ordinance Section 16.04.040, an appeal to the City Council may be submitted within ten days following the date of a decision by the Planning Commission. An appeal form with applicable fees shall be filed with the City Clerk at 220 N. Santa Fe, Visalia, CA 93291. The appeal shall specify errors or abuses of discretion by the Planning Commission, or decisions not supported by the evidence in the record. The appeal form can be found on the city's website www.visalia.city or from the City Clerk.

THE NEXT REGULAR MEETING WILL BE HELD ON MONDAY, AUGUST 12, 2024

REPORT TO CITY OF VISALIA PLANNING COMMISSION

HEARING DATE: July 22, 2024

PROJECT PLANNER: Brandon Smith, Principal Planner
Phone: (559) 713-4636
E-mail: brandon.smith@visalia.city

SUBJECT: **Conditional Use Permit No. 2024-16**: A request by Costco Wholesale Corporation (Kimley-Horn and Associates, agent) to establish a 159,212 square foot building for the sale of general retail merchandise, a car wash, and a fuel dispensing service station, together with a master sign program, within the C-MU Zone. The site is located at the northeast corner of West Riggin Avenue and North Shirk Street (APN: 077-100-108).

STAFF RECOMMENDATION

Staff recommends approval of Conditional Use Permit No. 2024-16, as conditioned, based upon the findings in Resolution No. 2024-26. The staff recommendation is based on the conclusion that the request is consistent with the City General Plan, Carleton Acres Specific Plan, and Zoning Ordinance.

RECOMMENDED MOTION

I move to approve Conditional Use Permit No. 2024-16, based on the findings and conditions in Resolution No. 2024-26.

PROJECT DESCRIPTION

Costco Wholesale Corporation is requesting approval of a conditional use permit to allow the construction of a new 159,212 square foot Costco store, together with a separate 15-dispenser gas station and a 4,100 square foot automatic car wash facility, on 18.89 acres of parcel area. The action will include new on and off-site improvements to facilitate a new commercial development located on the northeast corner of Shirk Street and Riggin Avenue, within the Carleton Acres Specific Plan area adopted by the City Council on October 2, 2023.

The project is located within the Commercial Mixed Use (C-MU) zoning designation, wherein general retail uses exceeding 60,000 square feet, gasoline service stations, and automatic car washes are all conditionally allowed uses.

The inclusion of a warehouse commercial use, gas station, and car wash were all anticipated as part of the new 29-acre commercial designation identified in the Carleton Acres Specific Plan (see Exhibit “L” for the Specific Plan’s adopted land use plan). A preliminary site plan and a tentative parcel map showed these uses to be developed together with five commercial parcels fronting onto Riggin Avenue. The Specific Plan always anticipated that the conditionally allowed uses within the commercial center would be evaluated under a separate conditional use permit application and a separate public hearing held by the Planning Commission.

The environmental impacts associated with development of the commercial designation, including these specific uses, were assessed in the Environmental Impact Report (EIR) for the Carleton Acres Specific Plan, adopted by the City Council on October 2, 2023. The EIR was prepared to consider a single tenant or anchor within the commercial area, including a gas station and car wash, that is not more than 170,000 square feet within the C-MU zone. The EIR further mentioned Costco as an anticipated use for the anchor store.

The proposed site plan is shown in Exhibit “A”. This site plan incorporates slight modifications to the concept plan that was shown in the Specific Plan document and the initial Site Plan Review submittal in 2022. Specifically, the location of the Costco Warehouse store has shifted to the east side of the site, the floor plan has been flopped, and a parking field has been placed between the store entrance and the car wash. The gas station and car wash have retained their original locations on the commercial site, and the car wash has been rotated one quarter turn so that a new signalized access point may be added on Shirk Street between the gas station and car wash. The store’s landscape plan is included as Exhibit “B”, the warehouse elevations are included as Exhibit “C”, the fuel / car wash elevations are included as Exhibit “D”, and the floor plan is included as Exhibit “E”. A project narrative is included as Exhibit “F”.

The project will include a parking field and landscaping with 904 stalls retained for Costco-related uses. The total parking space count equates to approximately one stall per 176 square feet of warehouse building area, exceeding the City’s standard of one stall per 300 square feet of retail building area.

The warehouse will incorporate the construction of masonry walls to screen and buffer noise associated with the land uses, including the loading docks at the southeast corner of the site. A 12’-0” tall loading dock wall will extend from the building adjacent to the four loading stalls. Along Denton Street to the east, there will be a 7’-4” site wall that will increase to 10’-0” height within the closest proximity to the loading docks. The 7’-4” wall is permissible at this location since it is outside of the required 10-foot building and landscape setback.

The project site is directly adjacent to multi-family residential (R-M-2) zoning along the north boundary and across from Denton Street, though there are no existing buildings, nor any approved development plans other than the conceptual development plans associated with the Carleton Acres Specific Plan. A 7’-4” masonry wall will be constructed along the north boundary, which will be sufficient to buffer noises from the car wash and site operations, as further detailed in an acoustical study included as Exhibit “I”.

The 18.89-acre project will comprise a majority of a commercial development that contains an additional 6.35 net acres of development between the Costco facility and Riggin Avenue. Direct vehicular access to Costco will be from the east and west, including a signalized intersection at Shirk Street and a full access intersection on Denton Street at Riggin Avenue. In addition, there will be two shared entry drives located to the south on the adjacent commercial parcels along Riggin Avenue.

BACKGROUND INFORMATION

General Plan Land Use Designation	Commercial Mixed Use
Zoning	Commercial Mixed Use (C-MU)
Surrounding Zoning and Land Use	North: Multi-family Residential (R-M-2) / Vacant land South: Single-family Residential (R-1-5) & Multi-family Residential (R-M-2) / Riggin Ave, senior duplex units, subdivision tract homes East: Multi-family Residential (R-M-2) / Vacant land West: Light Industrial (I-L) / Shirk Street, vacant land
Environmental Review	Previously approved Environmental Impact Report for Carleton Acres Specific Plan project, certified October 2, 2023 (SCH #2021050418)

RELATED PLANS & POLICIES

See separate Municipal Ordinance chapter pertaining to conditional use permits.

RELATED PROJECTS

Conditional Use Permit No. 2024-27: A separate conditional use permit for a master sign program to the commercial development that includes the proposed Costco Warehouse was submitted by separate applicants. The sign program includes wall sign area for the Costco Warehouse that exceeds the City standard of maximum 150 square feet for a single tenant. This CUP is being considered on the same Planning Commission agenda (i.e. July 22, 2024) as the subject CUP.

Carleton Acres Specific Plan (Specific Plan No. 2021-13): A request to adopt a new specific plan (Carleton Acres Specific Plan) consisting of 507 acres, including districts for low, medium, and high density residential, commercial mixed use, neighborhood commercial, parks / open space, and public institutional. The specific plan contains policy language and regulations which apply to the project site. The Specific Plan was recommended for approval by the Planning Commission on September 11, 2023, and approved by City Council on October 2, 2023.

Tentative Parcel Map No. 2023-04: A request to subdivide the existing 468-acre parcel into eight parcels for commercial use, having a gross acreage of 28.7 acres, plus a remainder parcel. Three of the parcels will be utilized for the Costco Warehouse, car wash, and fueling station. The Parcel Map was approved by the Planning Commission on September 11, 2023. A final map is currently being reviewed by the City for recordation with the County.

PROJECT EVALUATION

Staff supports Conditional Use Permit No. 2024-16, as conditioned, based on the project findings and consistency with the Visalia General Plan, the Carleton Acres Specific Plan, and the Zoning Ordinance.

Land Use

General retail uses exceeding 60,000 square feet are “Conditional” uses in the Commercial Mixed Use zone, and as specified in the Carleton Acres Specific Plan, Page 40. The general retail merchandise, groceries, tire sales & service (excluding major repairs), optical exams and sales, hearing aid testing and sales, fast food, specialty food (i.e. butcher), alcohol sales, and propane sales are all permitted as stand alone or incidental uses in this zone.

Likewise, gasoline service stations and automatic car washes are “Conditional” uses in the Commercial Mixed Use zone.

The General Plan identifies the Mixed Use Commercial designation as one which allows for “either horizontal or vertical mixed use development and a range of commercial, service, office, and residential uses”, does not provide any locational criteria.

Development Standards (Carleton Acres Specific Plan)

The Specific Plan contains standards that apply to all uses constructed within the Specific Plan area, including commercial uses.

The project is being constructed as part of Phase 1 of Specific Plan improvements, which will accommodate up to 188,000 square feet of a commercial anchor, retail uses, and food services (Specific Plan, Page 37).

Building architecture standards are generally described in the Specific Plan as having varied facades and complexity in building design. All building architecture must be reviewed and approved by the Architectural Board as described in the Specific Plan. The proposed facades, shown in Exhibit "C", achieve the Plan's policies and standards through the use of undulating walls and a split face treatment at the pedestrian level, while maintaining Costco's typical warehouse look consisting of no windows along the elevations. A red stripe is utilized around the building, excepting along the north elevation and portion of the east elevation which will face residential uses.

The building will be 32' in height, which meets the maximum height limit of 50' The setbacks are defined by the Specific Plan, Page 51 and are noted below:

	Building Setback Standard	Building Setback Actual	Landscape Setback Standard	Landscape Setback Actual
Shirk	10'	15'	10'	10'
Denton	10'	10' to screen wall	10'	10'
North abutting R-M	0'	51'	15'	16'

Access and Circulation

The project site will be accessed at the following locations:

- Shirk Street: (three vehicular access points). There will be one fully signalized opening between the car wash and fuel station. The signal is intended to align with the vehicular access for the future industrial park to the west. Also, there will be two right-in, right-out vehicular driveways, with the most northerly driveway intended to accommodate incoming truck traffic.
- Denton Street: (one vehicular access point). There will be one full access intersection aligned with a local street to the east. This will provide access to a signalized intersection at Riggin & Denton, including an exit for truck traffic.
- Riggin Avenue: two intersections through off-site shared entry drives. The access drives will lead to two right-in right-out accesses, including an exit for truck traffic.

The inclusion of signalized intersections at Shirk / "Access Driveway F" and at Riggin / Denton are supported by the Focused Traffic Study Technical Memorandum (see Exhibit "H") that was accepted by the City prior to the filing of the CUP. This study addresses the distance between drive approaches which would otherwise not meet the City's minimum distance standards between driveways and signalized intersections. The signal at Shirk / "Access Driveway F" will be spaced at 650 feet north from Shirk / Riggin and will utilize progressive signal timing (i.e. coordinated / synchronized timing of traffic light operation) to manage the movement of traffic between signals.

The signalized intersections are part of the initial phase recommendation intended to occur before Costco's opening day, as specified in Table 1 of the Technical Memorandum. Table 1 further recommends inclusion of a second left turn lane from southbound Denton to eastbound Riggin.

Off-site Improvements

The improvement of street frontages immediately adjacent to the project site will occur in association with the improvements for the final map of previously approved Tentative Parcel Map No. 2023-04, which also includes the establishment of five parcels for future commercial use along Riggin Avenue.

Off-site improvements entailing intersection improvements and roadway widenings are recommended to be in place before Costco's opening day by Costco's focused traffic study (reference Tables 1 and 2). Certain roadway widening projects are being completed as City capital improvement projects and are not all anticipated to be in a completed state prior to Costco's opening day. All improvements are discussed further below. Improvements that are within control of the Carleton Acres development are addressed in the CUP's recommended approval Condition #7.

Riggin Avenue (Shirk to Akers). In addition to the street frontage improvements, the City is coordinating the widening of Riggin Avenue from two lanes to four lanes between Shirk Street and Akers Street. Coordination is between the developer of the Carleton Acres project and Southern California Edison.

Currently there are 15 transmission/power poles along Riggin that will ultimately need to be relocated to outside of the four planned travel lanes. Edison anticipates a June 2025 completion date for moving the poles, despite coordination efforts that have been ongoing for years. Developers representing the Carleton Acres project have been actively working and submitting plans to Edison to coordinate street widening improvements and power pole relocation for the segment between Shirk and Roeben.

The widening of Riggin Avenue, from Shirk to Denton along the project frontage, and off-site from Denton to Akers, is an essential and necessary improvement associated with the development of Costco. Such improvements were previously addressed in a Development Agreement prepared for the Carleton Acres Specific Plan, adopted by the City Council. The Development Agreement places terms for the staged development of Riggin from west to east joining with Akers. Specifically, the developer of the Carleton Acres project will facilitate widening between Shirk and Denton, which shall occur before occupancy of Costco. The City is separately appropriating Measure R Regional Funds and City Transportation Impact Fees to fund Riggin Avenue widening from Denton to Akers.

The overall widening of Riggin Avenue between Shirk and Akers is part of the Costco Focused Traffic Study Technical Memorandum recommended off-site improvements listed in Table 2. This study suggests that this improvement, among others, be completed before Costco's opening day, and further states that the overall timeline for annexation and street / utility pole improvements will ultimately determine the start date for Costco's on-site construction. Recommended Condition of Approval #7 addresses the segment between Shirk Street and Denton Street which must be completed before opening day, while the segment between Denton Street and Akers Street is anticipated to have ongoing improvements after Costco opens.

Riggin Avenue (Kelsey to Shirk). The City is coordinating the widening of Riggin Avenue from two lanes to four lanes between Kelsey Street and Shirk Street. This is being completed as a capital improvement project, including coordination with Southern California Edison for the relocation of poles. The City anticipates that this segment will be awarded for construction before the end of 2024, and construction should be completed on this segment before Costco's opening day. Widening of this segment is not a roadway improvement called out in the Costco Focused Traffic Study or the Carleton Acres Specific Plan Traffic Study.

Shirk Street (Riggin to Sedona). The widening of northbound Shirk Street from Riggin Avenue to future Sedona Avenue (approximately 400 feet north of the project site) is part of the initial phase recommendation intended to occur before Costco's opening day, as specified in Table 2 of the Focused Traffic Study. Specifically, the developer of the Carleton Acres project will facilitate widening of Shirk between Riggin and Sedona, which shall occur before occupancy of Costco.

Shirk Street (1/4 mile south of Riggin to School). The widening of Shirk Street south of the project site from ¼ mile south of Riggin Avenue to School Avenue (north of the State Route 198 interchange) is a separate City Capital Improvement Project scheduled for 2025. The widening will be preceded by installation of a sewer trunk line in Shirk Street in late 2024. This segment of roadway widening is not part of the Costco Focused Traffic Study Technical Memorandum recommended off-site improvements listed in Tables 1 and 2, to be completed before Costco's opening day. Completion of the final ¼-mile segment of Shirk Street immediately south of Riggin Avenue will be done in tandem with future development of the industrial-designated property on the southwest corner of Shirk and Riggin.

Queuing for Fuel Station & Car Wash

At the City's request during the project's consideration through Site Plan Review, a study has been prepared to address the management of vehicles queuing at the proposed fuel station and car wash (refer to the Technical Memorandum attached as Exhibit "I"). Enforcement of the study is addressed in the CUP's recommended approval Condition #8.

For the fueling station, the study illustrates that the staging area in front of the dispensers can accommodate eight lines of cars stacked three deep (i.e. 24 vehicles) in an organized manner. If vehicles stack outside of the staging area, employees will utilize temporary signage and traffic cones to direct the stacking of cars.

For the car wash, the study indicated that 26 vehicles can be stacked in the driving lanes before reaching the parking lot. The study suggests that while queuing at Costco's car washes are minimal, one employee can be assigned to manage and loop vehicles within the parking lot.

Noise

Preparation of the Environmental Impact Report previously approved for the Carleton Acres Specific Plan, which included development of Costco in its scope, included a noise impact analysis (WJV Acoustics, March 2023) to evaluate the impact of noises generated by the entire project including Costco. This analysis recommended mitigation measure "NOI-3" for the car wash in the form of a 10' on-site block wall utilized together with the blower drying system to meet noise threshold requirements for future multi-family residential land uses located north of the Costco building.

However, a new noise impact analysis (Acoustical Engineering Services, Inc., May 2024; see Exhibit "J") was subsequently prepared to evaluate the impact of noises generated specifically for Costco. This new study also accounted for the most current development plan for the warehouse and car wash, which had changes since 2023. The analysis considered construction and operational noise impacts and concluded that impacts would be less than significant if the land uses were constructed with its project design features as proposed. There would not be any new or more severe noise impacts than were analyzed in the Specific Plan EIR.

In conclusion, the analysis performed by Acoustical Engineering Services, Inc. determined that the car wash will comply with mitigation measure "NOI-3" through the reorientation of the car wash to the present east-west axis rather than the north-south axis. This would result in shielding car wash noise with both the car wash tunnel and the 7'-4" wall that is required by City standard along the site's northern boundary. The 10' on-site block wall recommended in the

previous 2023 noise impact analysis would no longer be required. This study still accounts for use of an IDC 100 horsepower Predator Blower System running at 55 Hz.

Regarding noise impacts around the warehouse's loading dock, impacts would be less than significant with the project's design features as proposed, which include:

- A 7.3 to 10-foot-tall sound wall along the eastern side along Denton Street (outside of the required setback) to block the acoustic line-of-sight between the parking lot to the future residential uses to the east.
- An 8-foot-tall sound wall around the trash/compost compactors on the east side of the building to block the acoustic line-of-sight to the future residential uses to the east.
- A 12-foot-tall sound wall along the east side of the loading dock on the east to block the acoustic line-of-sight to the future residential uses to the east.
- Acoustics absorptive finishes at the interior walls of the loading dock and trash/compost trash compactors.

Staff has addressed noise compliance in the CUP's recommended approval Condition #10 by requiring the developer to conduct a noise compliance study prior to occupancy of the car wash facility.

Staff has determined that such design features are necessary based upon Costco's project narrative statement where the store anticipates an average of 10 trucks daily delivering between the times of 2:00 a.m. and 1:00 p.m. Therefore, these project design features are addressed as a requirement in the CUP's recommended approval Condition #9.

Lighting

The project will create new sources of light that are typically associated with commercial retail use. The applicant has prepared a photometric study (Exhibit "G") which demonstrates the use meeting the standard communicated through the project's Site Plan Review comments of no more than 0.5 lumens or footcandles crossing at property line.

Staff has addressed lighting compliance in the CUP's recommended approval Condition #12 by requiring the developer to conduct a lighting measurement prior to occupancy of the site.

The Carleton Acres Specific Plan provides standards on exterior lighting and lighting spillover, located in Section 6.10 on page 110. The standards also include a limitation of 0.5 lumens at property line and language toward preventing glare and visibility of light elements.

The Specific Plan further contains a standard stating that parking lot and drive aisle lighting adjacent to residential units or designated properties should consider the use of maximum 15-foot height poles. The Costco photometric study identifies light poles at 36-foot throughout the project, including seven poles between a drive aisle and the property line adjacent to an R-M-2 (multi-family residential) designated property, approximately 12 to 16 feet south of the property line. The property line north of the project site is the only property line directly adjacent to a residential land use designation not separated by a street.

Staff has included recommended approval Condition #11 which would limit the poles located between the residential property line and the drive isle to 15 feet, in accordance with the Specific Plan. Although the photometric study illustrates that the 0.5 lumens will not be exceeded at property line, the placement of the poles represents a significant concern for creating glare into residences based on the factors of height and setback. The adjacent R-M zone allows multi-story buildings no closer than 10 feet north of the property line, resulting in a potentially less than 1:1 ratio for height and setback.

Signage

The building elevations in Exhibits "C" and "D" call out the proposed wall signage for the warehouse, fuel station, and car wash. The wall signage for the warehouse would exceed the City's maximum allowance for wall sign area on a single tenant. However, consideration for additional sign area beyond the standard is through the project's master sign program, submitted as Conditional Use Permit No. 2024-27. Therefore, signage is not evaluated as part of this CUP.

Environmental Review

The project is part of the development of a specific plan area that was evaluated in the Environmental Impact Report (EIR) for the Carleton Acres Specific Plan (SCH#2021050418), certified by the Visalia City Council on October 2, 2023, by Resolution No. 2023-48. This EIR is being used as the environmental document for this Conditional Use Permit.

The EIR determined that there would be significant impacts resulting from the development of land uses within the Carleton Acres Specific Plan. A Mitigation and Monitoring Plan adopted with the EIR includes mitigation measures that reduce or eliminate the severity of some of these impacts to a level that is less than significant. This Mitigation and Monitoring Plan is included as Exhibit "K" in the staff report. Staff recommends a condition for the Conditional Use Permit which states that the Mitigation and Monitoring Plan shall apply to this project.

The preparation of the EIR included the preparation of several technical studies to consider impacts related to specific functions of the Costco Warehouse. Technical studies for the fields of traffic, noise, and air quality / greenhouse gas / energy were prepared based upon the known inclusion of a large retail store with a fuel station and car wash, while technical studies related to biology, cultural resources, environmental site assessment, and water supply were prepared with the focus being on the overall development of the specific plan area.

In addition, a new technical study has been prepared which evaluates the noise and vibration impacts from the construction and operation of the Costco Warehouse and the car wash. The new study considers a reconfiguration of the car wash facility that was not accounted for in the original noise study utilized in the EIR. The findings of this study do not result in the necessity of any new mitigation beyond that associated with the original noise study.

RECOMMENDED FINDINGS

1. That the site is located within the Carleton Acres Specific Plan, and is consistent with the goals and policies of the Carleton Acres Specific Plan.
2. That the proposed Conditional Use Permit is consistent with the policies and intent of the General Plan and Zoning Ordinance.
3. That the proposed Conditional Use Permit is compatible with adjacent land uses.
4. That the proposed Conditional Use Permit is not detrimental to the public health, safety, or welfare, or materially injurious to properties or improvements in the vicinity.
5. That the Environmental Impact Report prepared and certified for the Carleton Acres Specific Plan project (SCH #2021050418) includes the proposed conditional use permit in its project description of a retail anchor tenant not to exceed 170,000 square feet, a fueling station, and an automatic car wash.
6. That no new information has arisen since certification of the Environmental Impact Report that alters its analysis of impacts or conclusions as to effects and required mitigation. Therefore, the EIR adequately addresses environmental impacts associated with this project.

This finding is further supported by technical studies which have prepared for the proposed project as it related to the fields of traffic, biology, cultural resources, noise, and air quality / greenhouse gases / energy.

7. That a separate noise and vibration impact study was prepared for the requested Conditional Use Permit, and disclosed that the buildout of the project would be less than significant and would not result in new or more severe noise impacts than those analyzed in the previously approved Carleton Acres Specific Plan Environmental Impact Report.

RECOMMENDED CONDITIONS OF APPROVAL

1. That the project be developed in substantial compliance and be consistent with the conditions of Site Plan Review Item No. 2024-029, unless otherwise indicated herein.
2. That the site, including the locations of buildings, access points, and primary drive aisles, be developed in substantial compliance with the approved site plan shown in Exhibit "A".
3. That the project's landscaping (including shade requirement and species distribution), design, and architecture be developed in substantial compliance with the landscape plans shown in Exhibit "B" and the building elevations shown in Exhibits "C" and "D", except signage which is considered by separate permit and entitlement. These exhibits are intended to be consistent with the goals and policies contained in the Carleton Acres Specific Plan.
4. That any signage standards and/or criteria that call for a greater sign copy area on the site than that which is permitted by the City's standards contained within the Sign Ordinance (Chapter 17.48 of Municipal Code) be reviewed and approved not by this permit but by separate Conditional Use Permit (i.e. CUP No. 2024-16).
5. That screening shall be provided for roof mounted equipment, either by parapet wall or by screening placed immediately surrounding the equipment, and that outdoor storage shall be screened from public view using a solid material.
6. That the project site shall dedicate necessary street frontage to the City of Visalia for Shirk Street, Riggin Avenue, and Denton Street through the recordation of a final parcel map (refer to previously approved Tentative Parcel Map No. 2023-04), and that such recording shall occur prior to the approval of final occupancy for the Costco warehouse building.
7. That the following Phase 1 Recommendations specified in Tables 1 and 2 of Costco's Focused Traffic Study Technical Memorandum (Exhibit "H") be completed prior to Costco being granted final occupancy:
    - Installation of traffic signal at Shirk Street and Riggin Avenue (ID 38).
    - Installation of traffic signal at Denton Street and Riggin Avenue (ID 39).
    - Striping of two southbound left turn lanes from Denton Street onto eastbound Riggin Avenue (ID 39).
    - Installation of traffic signal at Shirk Street and Site Access F (Central Access Driveway) (ID 80).
    - Widening Shirk Street from one to two northbound lanes from Riggin Avenue to Sedona Avenue.
    - Widening Riggin Avenue from two to four lanes from Shirk Street to Denton Street.
8. That employees at the fuel station and car wash shall continually monitor access to the facility and shall implement the Queue Management Plan (Exhibit "I") as necessary to

prevent vehicles blocking access to drive aisles and stacking into roadways. Modifications to the Queue Management Plan to further enhance queue management within the site shall be granted at the discretion of the City Planning and Engineering Divisions.

9. That the project shall retain the following project design features, already shown on the site plan included as Exhibit "A", for the purpose of reducing operational related noise impacts. Alternative features may be utilized if it can be demonstrated that noise levels will not exceed thresholds set by the City's Noise Ordinance.

    - A 7.3-foot-tall sound wall along the northern side of the project site adjacent to the future residential uses to the north.
    - A 7.3 to 10-foot-tall sound wall along the eastern side along Denton Street (outside of the required setback) to block the acoustic line-of-sight between the parking lot to the future residential uses to the east.
    - An 8-foot-tall sound wall around the trash/compost compactors on the east side of the building to block the acoustic line-of-sight to the future residential uses to the east.
    - A 12-foot-tall sound wall along the east side of the loading dock on the east to block the acoustic line-of-sight to the future residential uses to the east.
    - Acoustics absorptive finishes at the interior walls of the loading dock and trash/compost trash compactors shall be noted in the building plan submittal.
    - For the car wash, an IDC horsepower Predator Blower System that runs at 55 Hz.

10. That prior to final occupancy of any residential use north of the project site, the applicant/developer shall verify that the car wash equipment does not exceed Community Noise levels as identified in the noise analysis (Acoustical Engineering Services, Inc., May 2024). The applicant/developer shall have their acoustical noise consultant conduct noise measurements for the car wash and the measurement shall be submitted and verified by Community Development staff for acceptance. Failure to meet the noise requirements as specified in the acoustical analysis shall result in the applicant/developer implementing additional measures as needed to achieve noise level standards for the residences.

11. That any lighting fixture poles located in the landscaped area adjacent to the north property line, west of the Costco Warehouse building, shall utilize maximum 15-foot high poles. The photometric plan submitted by the applicant (Exhibit "G") identifies seven such lighting fixture, identified as poles #68 through #74.

12. That prior to final occupancy, the applicant/developer shall verify that the parking lot lighting does not exceed an output of 0.5 lumens measured at property line, in accordance with the site photometric plan submitted by the applicant (Exhibit "G"). The applicant/developer shall have their electrical or construction contractor conduct a light measurement to be submitted and verified by Community Development staff prior to final occupancy. Failure to meet requirements as specified in the photometric plan shall result in non-operation of the site until light levels are met.

13. That a detailed landscape and irrigation plan, consistent with City code requirements, shall be provided for review by the City prior to the issuance of building permits.

14. That landscape screening such as a 3-foot high solid hedge shall be installed where parking areas or drive-thru lanes and landscape setbacks meet.

15. That enclosures for trash containers and commercial recycling bins shall be provided as specified by the City Solid Waste Department. Such enclosures shall be screened from view from adjacent structures and roadways and shall be provided with solid gates.

16. That flat lens fixtures be utilized for the gas station under canopy lights to preclude direct light glare beyond the fuel islands.
17. That the mitigation measures found within the Mitigation and Monitoring Plan for the Carleton Acres Specific Plan Environmental Impact Report (also attached as Exhibit "K") are hereby incorporated as conditions of this conditional use permit, except where superseded by the findings and conclusions of the Costco Wholesale Warehouse Project Environmental Noise Impact Study (Acoustical Engineering Services Inc., May 2024).
18. That all other City codes and ordinances shall be met, unless modified by the Specific Plan.
19. The applicant and all successors in interest shall comply with all applicable federal, state and city codes and ordinances.

APPEAL INFORMATION

According to the City of Visalia Zoning Ordinance Section 17.02.145, an appeal to the City Council may be submitted within ten days following the date of a decision by the Planning Commission. An appeal with applicable fees shall be in writing and shall be filed with the City Clerk at 220 N. Santa Fe Street. The appeal shall specify errors or abuses of discretion by the Planning Commission, or decisions not supported by the evidence in the record. The appeal form can be found on the city's website www.visalia.city or from the City Clerk.

Attachments:

- Related Plans and Policies
- Resolution No. 2024-26 for Conditional Use Permit No. 2024-16
- Exhibit "A" – Site Plan
- Exhibit "B" – Landscape Plan
- Exhibit "C" – Elevations for Warehouse
- Exhibit "D" – Elevations for Fuel and Car Wash
- Exhibit "E" – Floor Plan
- Exhibit "F" – Project Narrative
- Exhibit "G" – Site Lighting Photometric Plan
- Exhibit "H" – Traffic Analysis
- Exhibit "I" – Queue Management Plan
- Exhibit "J" – Acoustical Analysis
- Exhibit "K" – EIR Mitigation and Monitoring Plan
- Exhibit "L" – Concept Plan for Carleton Acres Specific Plan
- City Council Resolution certifying Carleton Acres Specific Plan EIR
- Site Plan Review Comments
- General Plan Land Use Map
- Zoning Map
- Aerial Map
- Location Map

Related Plans & Policies

General Plan and Zoning: The following General Plan and Zoning Ordinance policies apply to the proposed project:

General Plan Policy

None.

Zoning Ordinance

Chapter 17.38: Conditional Use Permits

17.38.010 Purposes and powers.

In certain zones conditional uses are permitted subject to the granting of a conditional use permit. Because of their unusual characteristics, conditional uses require special consideration so that they may be located properly with respect to the objectives of the zoning ordinance and with respect to their effects on surrounding properties. In order to achieve these purposes and thus give the zone use regulations the flexibility necessary to achieve the objectives of this title, the planning commission is empowered to grant or deny applications for conditional use permits and to impose reasonable conditions upon the granting of such permits. (Prior code § 7525)

17.38.020 Application procedures.

A. Application for a conditional use permit shall be made to the planning commission on a form prescribed by the commission which shall include the following data:

1. Name and address of the applicant;
2. Statement that the applicant is the owner of the property or is the authorized agent of the owner;
3. Address and legal description of the property;
4. The application shall be accompanied by such sketches or drawings as may be necessary by the planning division to clearly show the applicant's proposal;
5. The purposes of the conditional use permit and the general description of the use proposed;
6. Additional information as required by the historic preservation advisory committee.

B. The application shall be accompanied by a fee set by resolution of the city council sufficient to cover the cost of handling the application. (Prior code § 7526)

17.38.030 Lapse of conditional use permit.

A conditional use permit shall lapse and shall become void twenty-four (24) months after the date on which it became effective, unless the conditions of the permit allowed a shorter or greater time limit, or unless prior to the expiration of twenty-four (24) months a building permit is issued by the city and construction is commenced and diligently pursued toward completion on the site which was the subject of the permit. A permit may be renewed for an additional period of one year; provided, that prior to the expiration of twenty-four (24) months from the date the permit originally became effective, an application for renewal is filed with the planning commission. The commission may grant or deny an application for renewal of a conditional use permit. In the case of a planned residential development, the recording of a final map and improvements thereto shall be deemed the same as a building permit in relation to this section. (Ord. 2001-13 § 4 (part), 2001: prior code § 7527)

17.38.040 Revocation.

Upon violation of any applicable provision of this title, or, if granted subject to a condition or conditions, upon failure to comply with the condition or conditions, a conditional use permit shall be suspended automatically. The planning commission shall hold a public hearing within sixty (60) days, in

accordance with the procedure prescribed in Section 17.38.080, and if not satisfied that the regulation, general provision or condition is being complied with, may revoke the permit or take such action as may be necessary to insure compliance with the regulation, general provision or condition. Appeals of the decision of the planning commission may be made to the city council as provided in Section 17.38.120. (Prior code § 7528)

17.38.050 New application.

Following the denial of a conditional use permit application or the revocation of a conditional use permit, no application for a conditional use permit for the same or substantially the same conditional use on the same or substantially the same site shall be filed within one year from the date of denial or revocation of the permit unless such denial was a denial without prejudice by the planning commission or city council. (Prior code § 7530)

17.38.060 Conditional use permit to run with the land.

A conditional use permit granted pursuant to the provisions of this chapter shall run with the land and shall continue to be valid upon a change of ownership of the site or structure which was the subject of the permit application subject to the provisions of Section 17.38.065. (Prior code § 7531)

17.38.065 Abandonment of conditional use permit.

If the use for which a conditional use permit was approved is discontinued for a period of one hundred eighty (180) days, the use shall be considered abandoned and any future use of the site as a conditional use will require the approval of a new conditional use permit.

17.38.070 Temporary uses or structures.

17.38.080 Public hearing--Notice.

A. The planning commission shall hold at least one public hearing on each application for a conditional use permit.

B. Notice of the public hearing shall be given not less than ten days nor more than thirty (30) days prior to the date of the hearing by mailing a notice of the time and place of the hearing to property owners within three hundred (300) feet of the boundaries of the area occupied or to be occupied by the use which is the subject of the hearing, and by publication in a newspaper of general circulation within the city. (Prior code § 7533)

17.38.090 Investigation and report.

The planning staff shall make an investigation of the application and shall prepare a report thereon which shall be submitted to the planning commission. (Prior code § 7534)

17.38.100 Public hearing--Procedure.

At the public hearing the planning commission shall review the application and the statement and drawing submitted therewith and shall receive pertinent evidence concerning the proposed use and the proposed conditions under which it would be operated or maintained, particularly with respect to the findings prescribed in Section 17.38.110. The planning commission may continue a public hearing from time to time as it deems necessary. (Prior code § 7535)

17.38.110 Action by planning commission.

A. The planning commission may grant an application for a conditional use permit as requested or in modified form, if, on the basis of the application and the evidence submitted, the commission makes the following findings:

1. That the proposed location of the conditional use is in accordance with the objectives of the zoning ordinance and the purposes of the zone in which the site is located;

2. That the proposed location of the conditional use and the conditions under which it would be operated or maintained will not be detrimental to the public health, safety or welfare, or materially injurious to properties or improvements in the vicinity.

B. A conditional use permit may be revocable, may be granted for a limited time period, or may be granted subject to such conditions as the commission may prescribe. The commission may grant conditional approval for a permit subject to the effective date of a change of zone or other ordinance amendment.

C. The commission may deny an application for a conditional use permit. (Prior code § 7536)

17.38.120 Appeal to city council.

The decision of the City planning commission on a conditional use permit shall be subject to the appeal provisions of Section 17.02.145. (Prior code § 7537) (Ord. 2006-18 § 6, 2007)

17.38.130 Effective date of conditional use permit.

A conditional use permit shall become effective immediately when granted or affirmed by the council, or upon the sixth working day following the granting of the conditional use permit by the planning commission if no appeal has been filed. (Prior code § 7539)

RESOLUTION NO. 2024-26

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF VISALIA APPROVING CONDITIONAL USE PERMIT NO. 2024-16: A REQUEST BY COSTCO WHOLESALE CORPORATION (KIMLEY-HORN AND ASSOCIATES, AGENT) TO ESTABLISH A 159,212 SQUARE FOOT BUILDING FOR THE SALE OF GENERAL RETAIL MERCHANDISE, A CAR WASH, AND A FUEL DISPENSING SERVICE STATION, TOGETHER WITH A MASTER SIGN PROGRAM, WITHIN THE C-MU ZONE. THE SITE IS LOCATED AT THE NORTHEAST CORNER OF WEST RIGGIN AVENUE AND NORTH SHIRK STREET (APN: 077-100-108 [PORTION])

WHEREAS, Conditional Use Permit No. 2024-27 is a request by Costco Wholesale Corporation (Kimley-Horn and Associates, agent) to establish a 159,212 square foot building for the sale of general retail merchandise, a car wash, and a fuel dispensing service station, together with a master sign program, within the C-MU Zone. The site is located at the northeast corner of West Riggin Avenue and North Shirk Street (APN: 077-100-108) [portion]; and

WHEREAS, the Planning Commission of the City of Visalia, after duly published notice did hold a public hearing before said Commission on July 22, 2024; and

WHEREAS, the Planning Commission of the City of Visalia finds the Conditional Use Permit to be in accordance with Chapter 17.38.110 of the Zoning Ordinance of the City of Visalia based on the evidence contained in the staff report and testimony presented at the public hearing; and

WHEREAS, the Planning Commission finds that the proposed project has no new effects that could occur, or new mitigation measures that would be required that have not been addressed within the scope of the Environmental Impact Report (EIR) for the Carleton Acres Specific Plan (SCH#2021050418), certified by the Visalia City Council on October 2, 2023, by Resolution No. 2023-48. The Environmental Impact Report adequately analyzed and addressed this proposed project and determined that there would be significant impacts resulting from the development of land uses within the Carleton Acres Specific Plan. A Mitigation and Monitoring Plan adopted with the EIR includes mitigation measures that reduce or eliminate the severity of some of these impacts to a level that is less than significant.

NOW, THEREFORE, BE IT FURTHER RESOLVED that the Planning Commission of the City of Visalia makes the following specific findings based on the evidence presented:

1. That the site is located within the Carleton Acres Specific Plan, and is consistent with the goals and policies of the Carleton Acres Specific Plan.
2. That the proposed Conditional Use Permit is consistent with the policies and intent of the General Plan and Zoning Ordinance.
3. That the proposed Conditional Use Permit is compatible with adjacent land uses.
4. That the proposed Conditional Use Permit is not detrimental to the public health, safety, or welfare, or materially injurious to properties or improvements in the vicinity.

5. That the Environmental Impact Report prepared and certified for the Carleton Acres Specific Plan project (SCH #2021050418) includes the proposed conditional use permit in its project description of a retail anchor tenant not to exceed 170,000 square feet, a fueling station, and an automatic car wash.
6. That no new information has arisen since certification of the Environmental Impact Report that alters its analysis of impacts or conclusions as to effects and required mitigation. Therefore, the EIR adequately addresses environmental impacts associated with this project. This finding is further supported by technical studies which have prepared for the proposed project as it related to the fields of traffic, biology, cultural resources, noise, and air quality / greenhouse gases / energy.
7. That a separate noise and vibration impact study was prepared for the requested Conditional Use Permit, and disclosed that the buildout of the project would be less than significant and would not result in new or more severe noise impacts than those analyzed in the previously approved Carleton Acres Specific Plan Environmental Impact Report.

BE IT FURTHER RESOLVED that the Planning Commission hereby approves the Conditional Use Permit on the real property here described in accordance with the terms of this resolution under the provisions of Section 17.38.110 of the Ordinance Code of the City of Visalia, subject to the following conditions:

1. That the project be developed in substantial compliance and be consistent with the conditions of Site Plan Review Item No. 2024-029, unless otherwise indicated herein.
2. That the site, including the locations of buildings, access points, and primary drive aisles, be developed in substantial compliance with the approved site plan shown in Exhibit “A”.
3. That the project’s landscaping (including shade requirement and species distribution), design, and architecture be developed in substantial compliance with the landscape plans shown in Exhibit “B” and the building elevations shown in Exhibits “C” and “D”, except signage which is considered by separate permit and entitlement. These exhibits are intended to be consistent with the goals and policies contained in the Carleton Acres Specific Plan.
4. That any signage standards and/or criteria that call for a greater sign copy area on the site than that which is permitted by the City’s standards contained within the Sign Ordinance (Chapter 17.48 of Municipal Code) be reviewed and approved not by this permit but by separate Conditional Use Permit (i.e. CUP No. 2024-16).
5. That screening shall be provided for roof mounted equipment, either by parapet wall or by screening placed immediately surrounding the equipment, and that outdoor storage shall be screened from public view using a solid material.
6. That the project site shall dedicate necessary street frontage to the City of Visalia for Shirk Street, Riggin Avenue, and Denton Street through the recordation of a final parcel map (refer to previously approved Tentative Parcel Map No. 2023-04), and that such recording shall occur prior to the approval of final occupancy for the Costco warehouse building.
7. That the following Phase 1 Recommendations specified in Tables 1 and 2 of Costco’s Focused Traffic Study Technical Memorandum (Exhibit “H”) be completed prior to Costco being granted final occupancy:
    - Installation of traffic signal at Shirk Street and Riggin Avenue (ID 38).

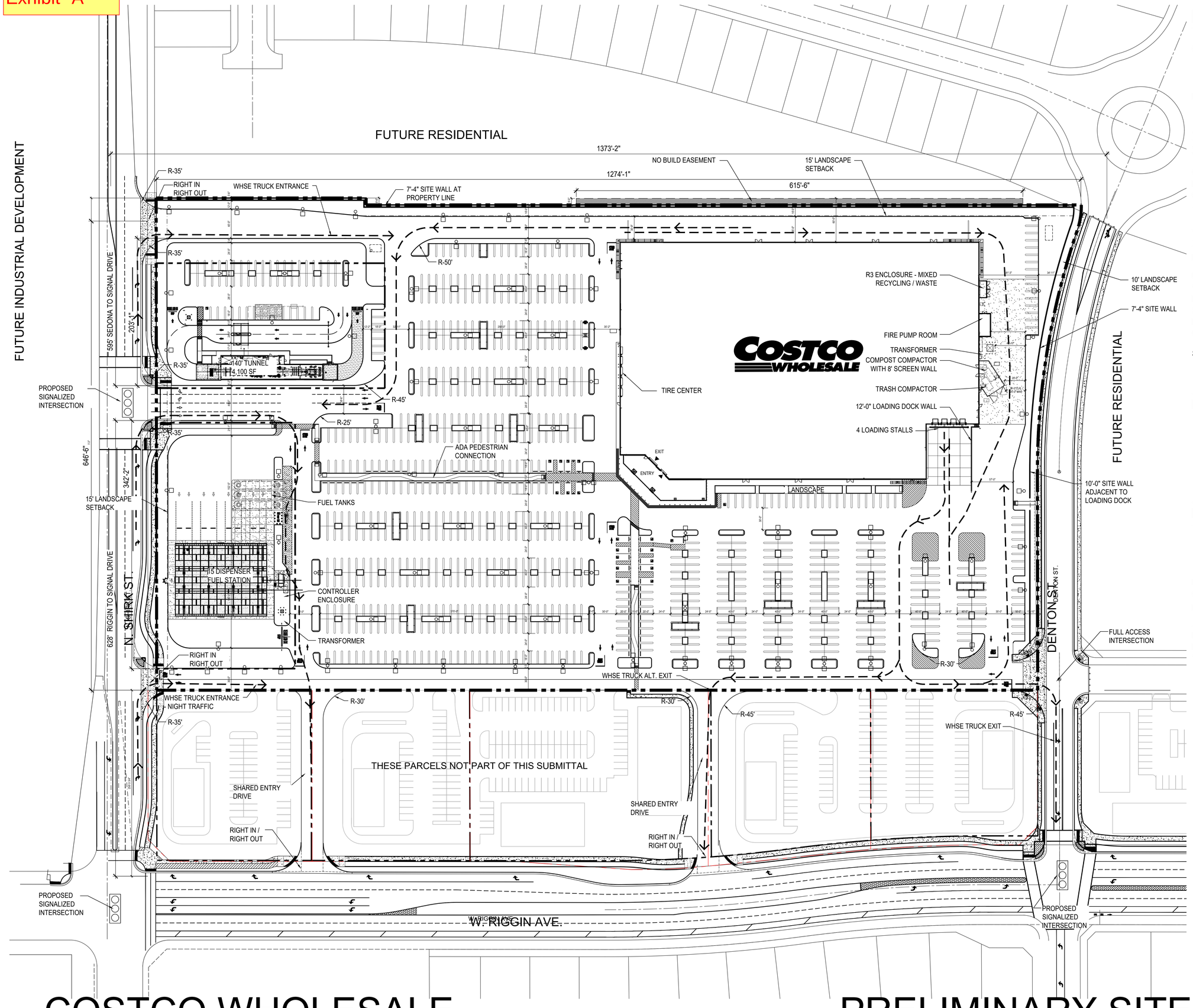
- Installation of traffic signal at Denton Street and Riggin Avenue (ID 39).
- Striping of two southbound left turn lanes from Denton Street onto eastbound Riggin Avenue (ID 39).
- Installation of traffic signal at Shirk Street and Site Access F (Central Access Driveway) (ID 80).
- Widening Shirk Street from one to two northbound lanes from Riggin Avenue to Sedona Avenue.
- Widening Riggin Avenue from two to four lanes from Shirk Street to Denton Street.

8. That employees at the fuel station and car wash shall continually monitor access to the facility and shall implement the Queue Management Plan (Exhibit "I") as necessary to prevent vehicles blocking access to drive aisles and stacking into roadways. Modifications to the Queue Management Plan to further enhance queue management within the site shall be granted at the discretion of the City Planning and Engineering Divisions.
9. That the project shall retain the following project design features, already shown on the site plan included as Exhibit "A", for the purpose of reducing operational related noise impacts. Alternative features may be utilized if it can be demonstrated that noise levels will not exceed thresholds set by the City's Noise Ordinance.
    - A 7.3-foot-tall sound wall along the northern side of the project site adjacent to the future residential uses to the north.
    - A 7.3 to 10-foot-tall sound wall along the eastern side along Denton Street (outside of the required setback) to block the acoustic line-of-sight between the parking lot to the future residential uses to the east.
    - An 8-foot-tall sound wall around the trash/compost compactors on the east side of the building to block the acoustic line-of-sight to the future residential uses to the east.
    - A 12-foot-tall sound wall along the east side of the loading dock on the east to block the acoustic line-of-sight to the future residential uses to the east.
    - Acoustics absorptive finishes at the interior walls of the loading dock and trash/compost trash compactors shall be noted in the building plan submittal.
    - For the car wash, an IDC horsepower Predator Blower System that runs at 55 Hz.
10. That prior to final occupancy of any residential use north of the project site, the applicant/developer shall verify that the car wash equipment does not exceed Community Noise levels as identified in the noise analysis (Acoustical Engineering Services, Inc., May 2024). The applicant/developer shall have their acoustical noise consultant conduct noise measurements for the car wash and the measurement shall be submitted and verified by Community Development staff for acceptance. Failure to meet the noise requirements as specified in the acoustical analysis shall result in the applicant/developer implementing additional measures as needed to achieve noise level standards for the residences.
11. That any lighting fixture poles located in the landscaped area adjacent to the north property line, west of the Costco Warehouse building, shall utilize maximum 15-foot

high poles. The photometric plan submitted by the applicant (Exhibit “G”) identifies seven such lighting fixture, identified as poles #68 through #74.

12. That prior to final occupancy, the applicant/developer shall verify that the parking lot lighting does not exceed an output of 0.5 lumens measured at property line, in accordance with the site photometric plan submitted by the applicant (Exhibit “G”). The applicant/developer shall have their electrical or construction contractor conduct a light measurement to be submitted and verified by Community Development staff prior to final occupancy. Failure to meet requirements as specified in the photometric plan shall result in non-operation of the site until light levels are met.
13. That a detailed landscape and irrigation plan, consistent with City code requirements, shall be provided for review by the City prior to the issuance of building permits.
14. That landscape screening such as a 3-foot high solid hedge shall be installed where parking areas or drive-thru lanes and landscape setbacks meet.
15. That enclosures for trash containers and commercial recycling bins shall be provided as specified by the City Solid Waste Department. Such enclosures shall be screened from view from adjacent structures and roadways and shall be provided with solid gates.
16. That flat lens fixtures be utilized for the gas station under canopy lights to preclude direct light glare beyond the fuel islands.
17. That the mitigation measures found within the Mitigation and Monitoring Plan for the Carleton Acres Specific Plan Environmental Impact Report (also attached as Exhibit “K”) are hereby incorporated as conditions of this conditional use permit, except where superseded by the findings and conclusions of the Costco Wholesale Warehouse Project Environmental Noise Impact Study (Acoustical Engineering Services Inc., May 2024).
18. That all other City codes and ordinances shall be met, unless modified by the Specific Plan.
19. The applicant and all successors in interest shall comply with all applicable federal, state and city codes and ordinances.

Exhibit "A"



PROJECT DATA

CLIENT:	COSTCO WHOLESALE 999 LAKE DRIVE ISSAQUAH, WA 98027
PROJECT ADDRESS:	NEC OF W. RIGGIN AVE. & N. SHIRK ST. VISALIA, CA
APN:	077-100-108

SITE DATA:

COSTCO PARCEL AREA:	16.15 ACRES (703,873 SF)
FUEL PARCEL AREA:	1.49 ACRES (64,773 SF)
CARWASH PARCEL AREA:	1.24 ACRES (54,271 SF)
TOTAL PARCEL AREA	18.89 ACRES (822,917 SF)
JURISDICTION:	CITY OF VISALIA
ZONING:	COMMERCIAL MIX USE
FLOOD ZONE:	X

UTILITY PROVIDERS:

WATER:	CALIFORNIA WATER SERVICE COMPANY
DRAINAGE:	CITY OF VISALIA
SEWER:	CITY OF VISALIA
ELECTRIC:	SOUTHERN CALIFORNIA EDISON
GAS:	SOUTHERN CALIFORNIA GAS

SETBACKS: REQUIRED
FRONT: 15'
REAR:15'
SIDE: 10'

BUILDING DATA:

TOTAL BUILDING FOOTPRINT AREA:	159,212 SF
INCLUDES:	
NET SALES FLOOR	**153,992 SF**
NET OPEN CANOPY	3,724 SF
BUILDING ENVELOPE	1,496 SF
FUEL CANOPY AREA:	12,680 SF
CAR WASH:	4,142 SF

PARKING DATA:

TOTAL PARKING:	904 STALLS
INCLUDES:	
(9) 10' WIDE STALLS	884 STALLS
(H) ACCESSIBLE STALLS (2% REQ'D)	20 STALLS
REQUIRED PARKING STALLS (GENERAL COMMERCIAL: 1 PER 300 SF)	531 STALLS
LOADING DOCK STALLS	4 STALLS

NOTES:
EXISTING CONDITIONS TO BE FIELD VERIFIED.

0 25' 50' 100'
1" = 50'-0"

COSTCO WHOLESALE
VISALIA, CA

VISALIA, CA
1101 Second Ave, Ste 100
Seattle, WA 98101
206 962 6500
MG2.com
MG2

22-5895-01
MAY 9, 2024

PRELIMINARY SITE PLAN

P11-41

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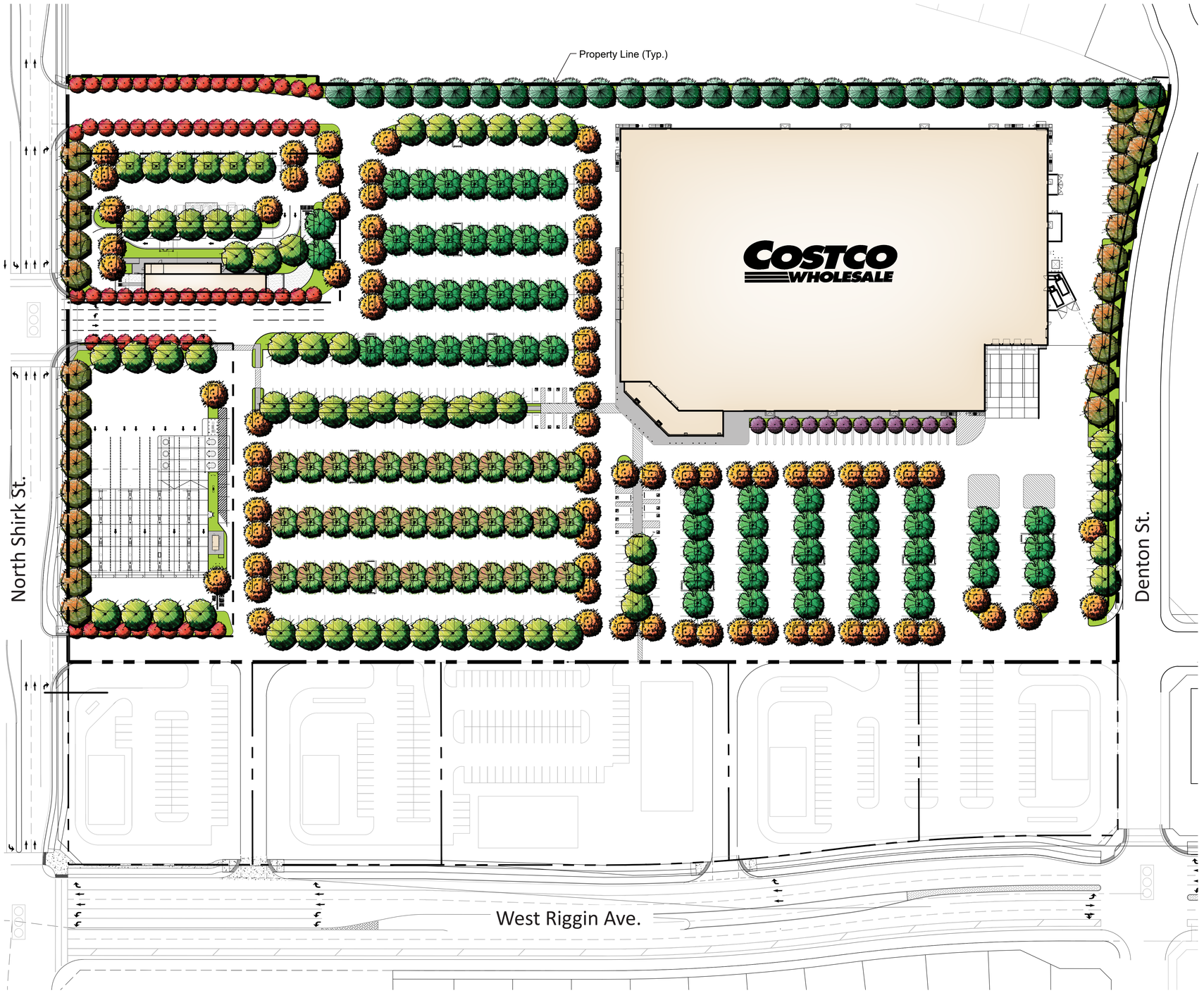
COSTCO WHOLESALE

VISALIA, CALIFORNIA

PRELIMINARY SITE PLAN

MAY 9, 2024

Exhibit "B"



PLANT LEGEND

Symbol	Botanical / Common Name	Size	WUCOLS (Water Use Classification Of Landscape Species)	Comments
	Trees			
	Lagerstroemia hyb. 'Muskogee' / Muskogee Crape Myrtle	24" box	L	Multi-Trunk. Matched in Size.
	Lagerstroemia hyb. 'Tuscorora' / Tuscorora Crape Myrtle	24" box	L	Matched Standards.
	Pinus elderica / Afghan Pine	24" box	L	Matched in Size.
	Pistacia chinensis 'Keith Davey' / Keith Davey Chinese Pistache	24" box	L	Matched Standards.
	Quercus shumardii / Shumard Oak	24" box	L	Matched Standards.
	Quercus virginiana / Southern Live Oak	24" box	L	Marched Standards.
	Ulmus parvifolia 'Drake' / Drake Chinese Elm	24" box	M	Matched Standards.
	Zelkova serrata 'Village Green' / Village Green Zelkova	24" box	M	Matched Standards.
	Understory Planting			
	Shrubs and Perennials			
	Abelia x grandiflora 'Edward Goucher' / Edward Goucher Abelia	15 gal.	L	
	Berberis thunbergii 'Rose Glow' / Rose Glow Japanese Barberry	5 gal.	M	
	Ceanothus 'Wheeler Canyon' / Wheeler Canyon Ceanothus	15 gal.	L	
	Dietes vegeta / Fortnight Lily	5 gal.	L	
	Elaeagnus pungens / Silverberry	15 gal.	L	
	Frangula californica 'Eve Case' / Eve Case Coffeeberry	15 gal.	L	
	Grevillea lavandulacea 'Penola' / Penola Lavender Grevillea	15 gal.	L	
	Heteromeles arbutifolia 'Davis Gold' / Davis Gold Toyon	15 gal.	L	
	Lomandra longifolia 'Breeze' / Breeze (Dwarf) Mat Rush	5 gal.	L	
	Phlomis fruticosa / Jerusalem Sage	5 gal.	L	
	Plumbago auriculata 'Royal Cape' / Royal Cape Plumbago	15 gal.	L	
	Rhapiolepis indica 'Pink Dancer' / Pink Dancer Indian Hawthorn	5 gal.	L	
	Rhus ovata / Sugar Bush	15 gal.	L	
	Ornamental Grasses			
	Festuca mairei / Atlas Fescue	5 gal.	L	
	Muhlenbergia rigens / Deer Grass	5 gal.	L	
	Ground covers			
	Cotoneaster dammeri 'Lowfast' / Lowfast Bearberry Cotoneaster	1 gal.	L	
	Juniperus horizontalis 'Plumosa Compacta' / Compact Plumosa Juniper	1 gal.	L	
	Rosa sp. 'Red Flower Carpet' / Red Flower Carpet Rose	5 gal.	M	
	Rosmarinus o. 'Collingwood Ingram' / Collingwood Ingram Rosemary	5 gal.	L	

LANDSCAPE DATA:

Site Coverage:
Total Costco Site Area: **18.89 AC** (822,848 Sqft.)
Landscape Area Provided: 93,357 Sqft. (11.3% of 822,848 Sqft.)

Shade Requirement:
Required: 50% Parking lot shading at 15 years.
Provided: 50.7%

WUCOLS LEGEND:

L Low Water Use
M Moderate Water Use

IRRIGATION SYSTEM STATEMENT:

The irrigation system will be a water efficient low flow, point source system designed to provide adequate watering to support plant growth and ensure deeply rooted plant material while avoiding excess water application. The system will be programmable, allowing operation during late night and/or early morning hours, with multiple start times and cycles. The system will interface with a weather based sensor that will adjust the amount of water applied to the plant material based on daily weather conditions. Irrigation materials specified for the site will be selected on the basis of durability and ease of maintenance. Landscape irrigation will comply with the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO). The irrigation design will ensure no ovespray into the open space occurs.

NOTE:

3/4" size decorative accent rock mulch will be specified in all planter areas.

0 25' 50' 100'
1" = 50'-0"

COSTCO WHOLESALE
VISALIA, CA

DB+A
DAVID BABCOCK + ASSOCIATES
ARCHITECTURE PLANNING LANDSCAPE
3581 MT. DIABLO BLVD. , SUITE 235
LAFAYETTE, CALIFORNIA 94549
T: 925.283.5070

DBA # P.323
MARCH 27, 2024

PRELIMINARY
LANDSCAPE PLAN

L-001

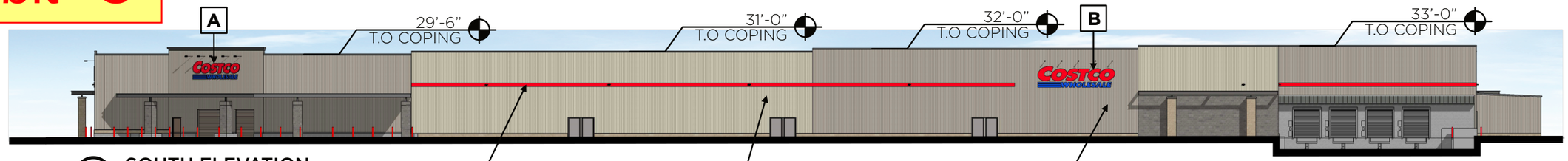
COSTCO VISALIA

VISALIA, CALIFORNIA

PRELIMINARY LANDSCAPE PLAN

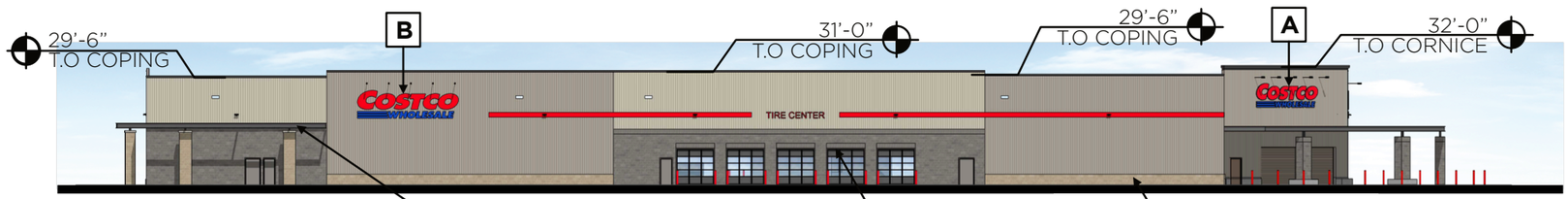
MARCH 27, 2024

Exhibit "C"



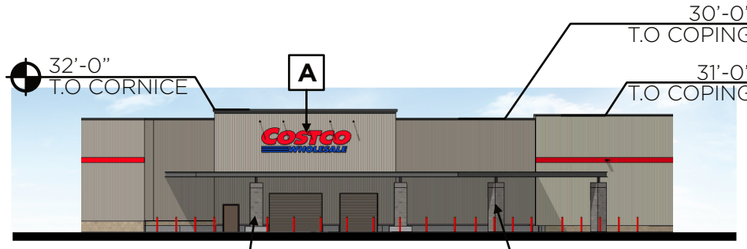
1 SOUTH ELEVATION
SCALE: 1" = 40'

STRIPE *"COSTCO RED"*
VERTICAL RIBBED PANEL *"PARCHMENT"*
HORIZONTAL RIBBED PANEL *"METALLIC CHAMPAGNE"*

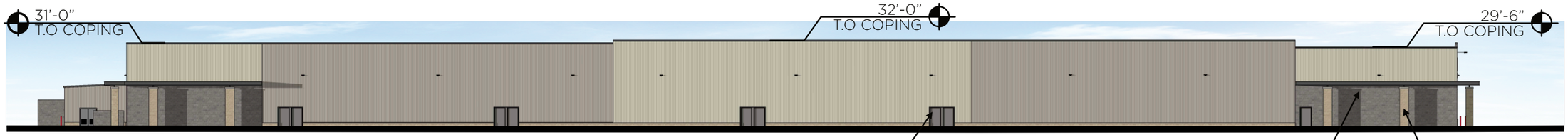


2 WEST ELEVATION
SCALE: 1" = 40'

ACCENT STEEL *"CHARCOAL"*
OVERHEAD DOORS *"CHARCOAL"*
SPLIT FACE CMU *"TAN"*

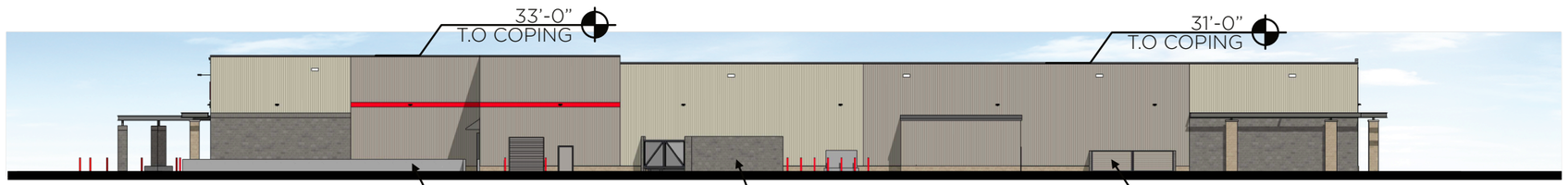


SPLIT FACE CMU *"MEDIUM GRAY"*
SPLIT FACE CMU *"MEDIUM GRAY"*



3 NORTH ELEVATION
SCALE: 1" = 40'

DOOR TO MATCH ADJACENT COLOR
SPLIT FACE CMU *"MEDIUM GRAY"*
SPLIT FACE CMU *"TAN"*



4 EAST ELEVATION
SCALE: 1" = 40'

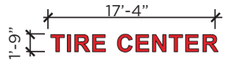
SCREEN WALL *"NATURAL CONCRETE"*
COMPACTOR WALL *"MEDIUM GRAY"*
REFUSE ENCLOSURE *"METALLIC CHAMPAGNE"*



A



B

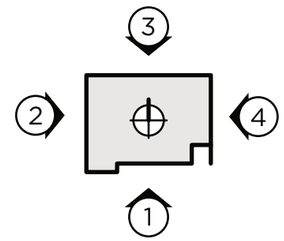


C

5 SIGN PACKAGE

SIGN TABLE

IDENTITY	*QUANTITY*	*SIGN*	*SIZE*	*AREA (EACH)*	*TOTAL SF*
A	1	COSTCO WHOLESALE	4'-6" C	141 SF	***141 SF***
B	2	COSTCO WHOLESALE	5'-0" C	175 SF	***350 SF***
C	1	TIRE CENTER	17'4" X 1'9"	31 SF	***31 SF***
			TOTAL SIGN AREA:		**522 SF**



MG2

MAY 08, 2024

VISALIA, CA

PG: 1

WAREHOUSE ELEVATIONS

COSTCO WHOLESALE

MAY 08, 2024

VISALIA, CA

ENTRY CANOPY PERSPECTIVE



MAY 08, 2024

VISALIA, CA

PG: 3

SOUTHEAST PERSPECTIVE

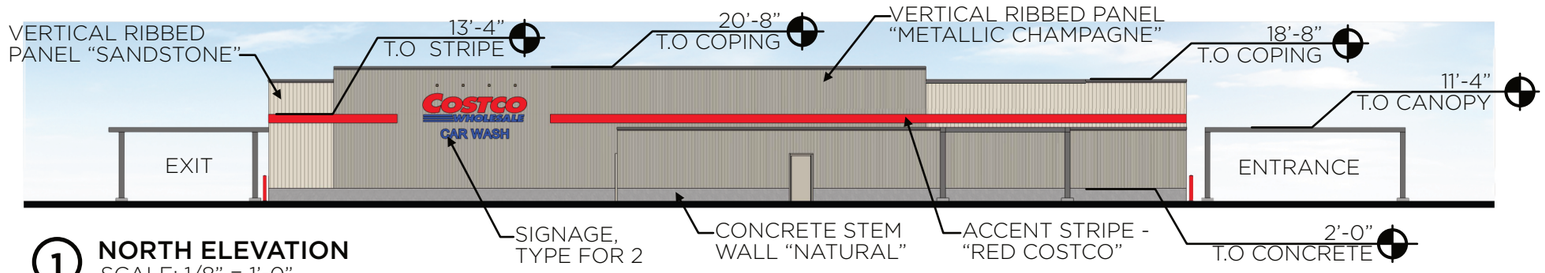


MAY 08, 2024

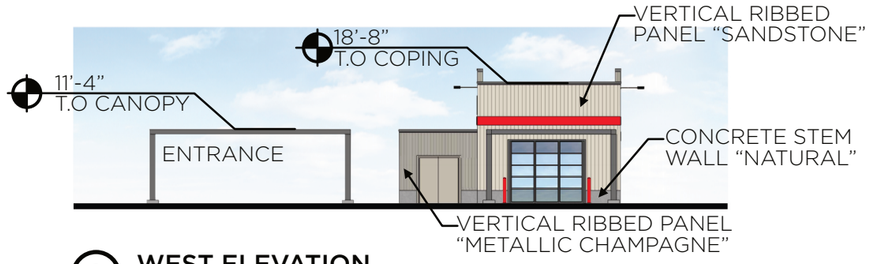
VISALIA, CA

NORTHWEST PERSPECTIVE

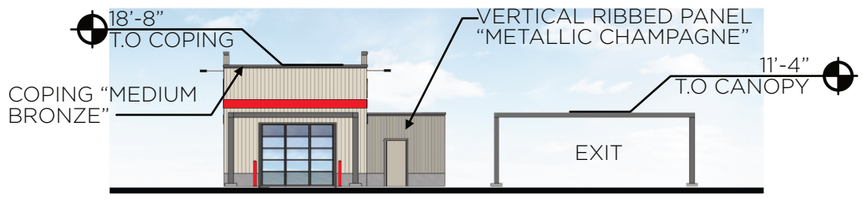
Exhibit "D"



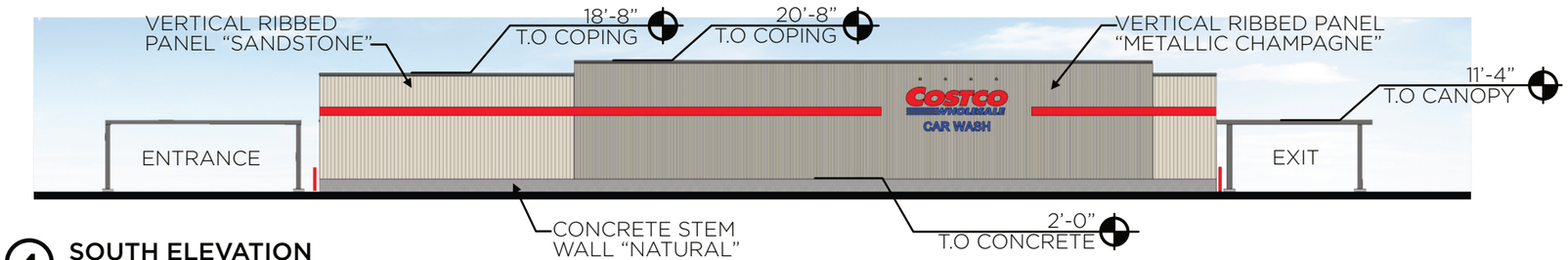
1 NORTH ELEVATION
SCALE: 1/8" = 1'-0"



2 WEST ELEVATION
SCALE: 1/8" = 1'-0"



3 EAST ELEVATION
SCALE: 1/8" = 1'-0"



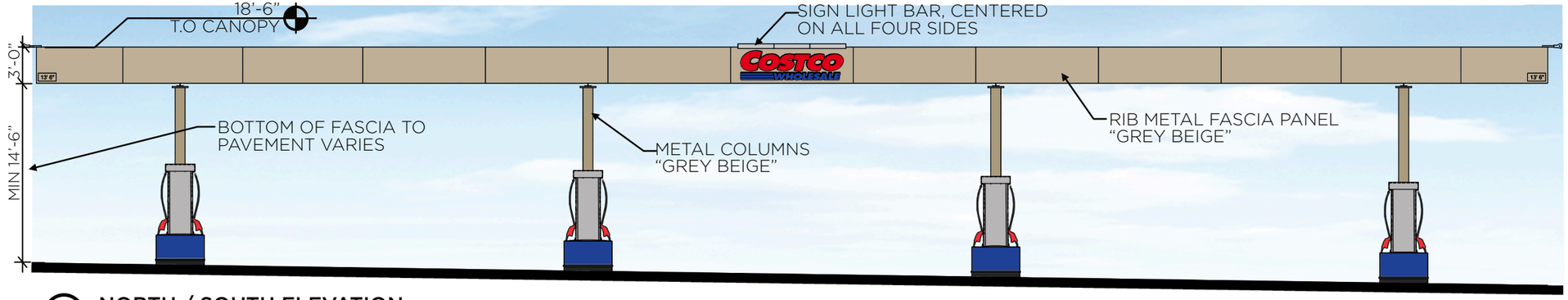
4 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"

SIGN TABLE

QUANTITY	*SIGN*	*SIZE*	*AREA (EACH)*	*TOTAL SF*
2	COSTCO WHOLESALE	3'-6" x 10'-6"	37 SF	***74 SF***
		TOTAL SIGN AREA:		**74 SF**



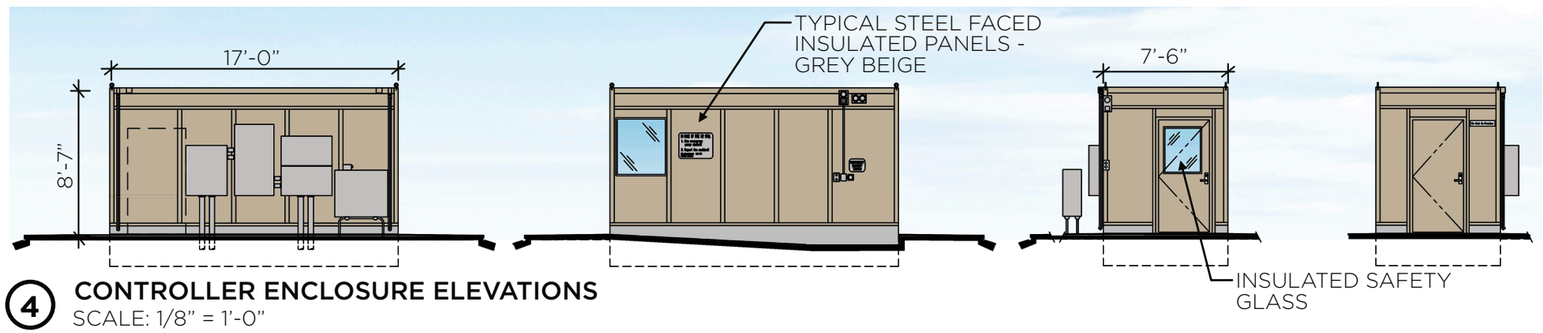
5 SIGNS
SCALE: 1/4" = 1'-0"



1 NORTH / SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



2 EAST / WEST ELEVATION
SCALE: 1/8" = 1'-0"



4 CONTROLLER ENCLOSURE ELEVATIONS
SCALE: 1/8" = 1'-0"

SIGNAGE AREA TABULATION (CANOPY SIGNS)				
QTY	SIGN	SIZE	AREA (SF) EA	TOTAL SF
4	COSTCO WHOLESALE	2'-5 1/4" "C"	21 SF	84 SF
			TOTAL SIGNAGE AREA	84 SF



5 CANOPY SIGNS
SCALE: 1/4" = 1'-0"

MG2

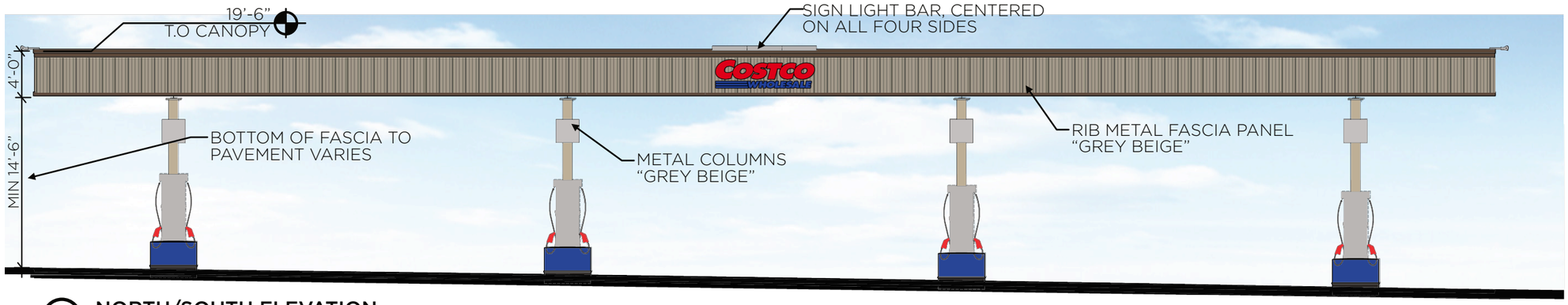
OCTOBER 11, 2023

VISALIA, CA

PG: 6

FUEL ELEVATION

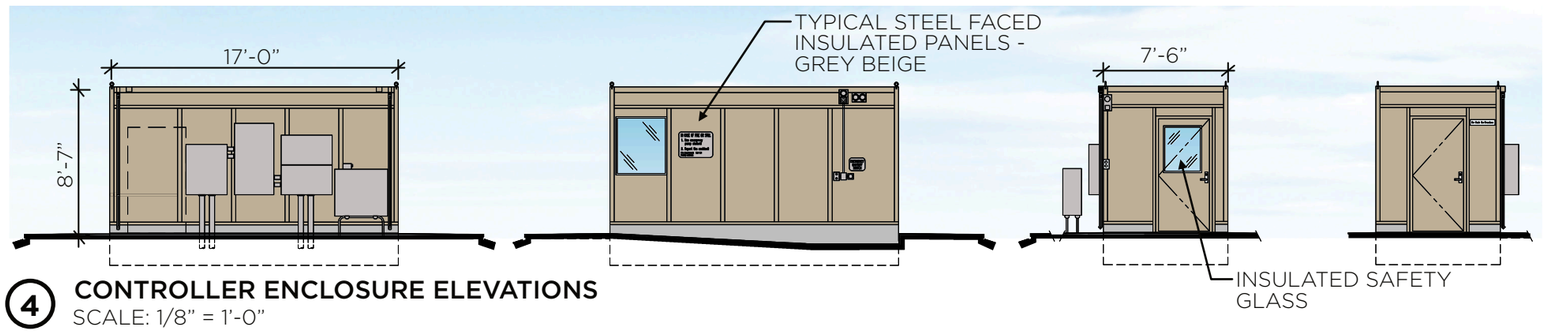
COSTCO WHOLESALE



1 NORTH/SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



2 EAST/WEST ELEVATION
SCALE: 1/8" = 1'-0"



4 CONTROLLER ENCLOSURE ELEVATIONS
SCALE: 1/8" = 1'-0"

SIGNAGE AREA TABULATION (CANOPY SIGNS)				
QTY	SIGN	SIZE	AREA (SF) EA	TOTAL SF
4	COSTCO WHOLESALE	2'-5 1/4" "C"	21 SF	84 SF
			TOTAL SIGNAGE AREA	84 SF



5 CANOPY SIGNS
SCALE: 1/4" = 1'-0"

MG2

JUNE 17, 2024

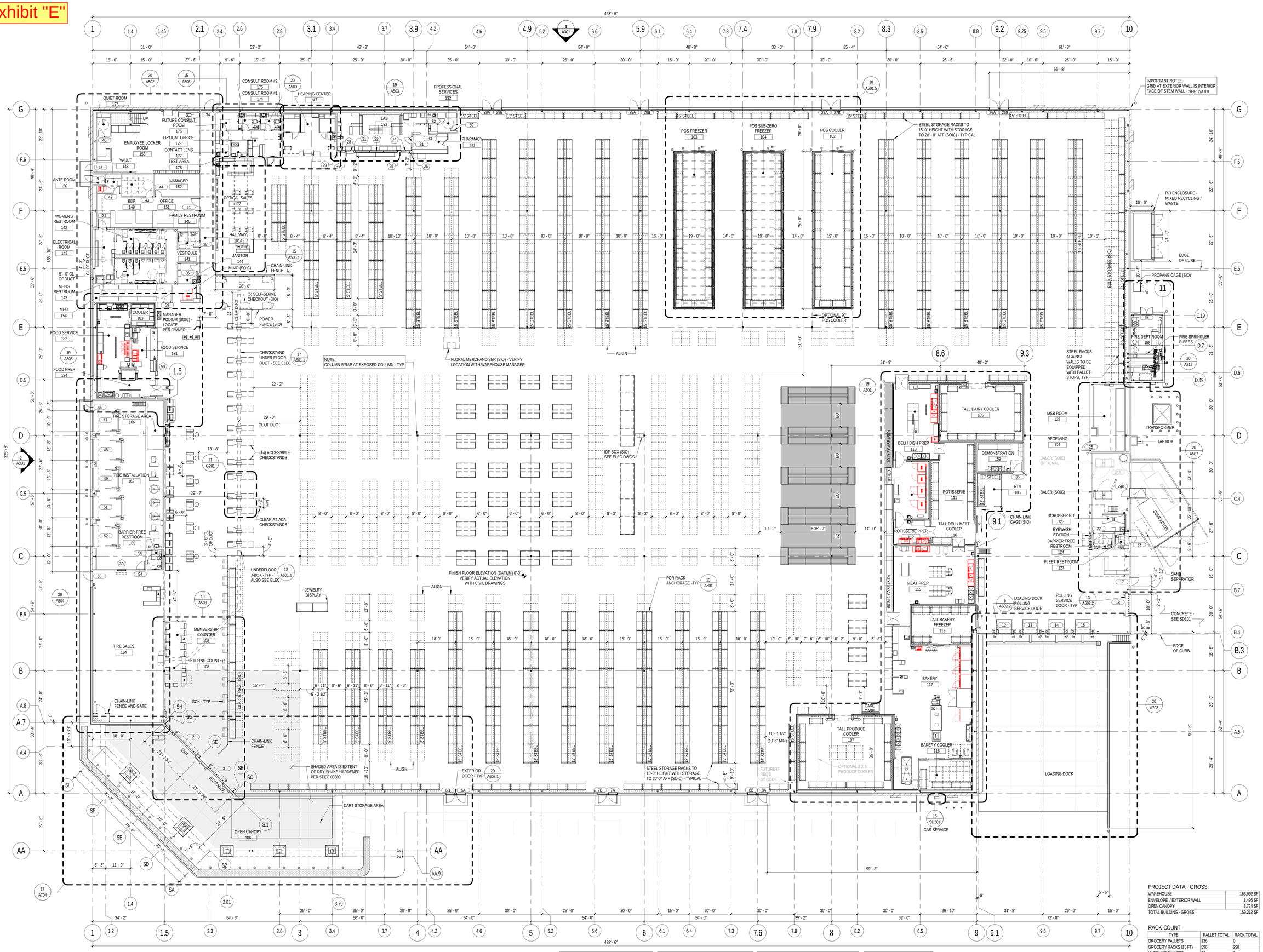
VISALIA, CA

PG: 1

FUEL ELEVATION

COSTCO WHOLESALE

Exhibit "E"



16 MAIN FLOOR

SCALE: 1/16" = 1'-0"

NOTE: ADD ADDITIONAL INSULATION AT PLUMBING LOCATED AGAINST EXTERIOR WALL - SEE: 2/A601

NOTE: LOCATE KNOX BOXES AS DIRECTED BY FIRE DEPT MAKE PROVISIONS TO TIE INTO SECURITY SYSTEM

NOTE: TO DETERMINE DOOR OPENING SIZE - SEE DOOR SCHEDULE ON A602 AND DETAILS ON A602.2 AND 602.3

NOTE: SEE G203 FOR SIGNAGE LOCATIONS

PROJECT DATA - GROSS

WAREHOUSE	153,992 SF
ENVELOPE / EXTERIOR WALL	1,496 SF
OPEN CANOPY	3,724 SF
TOTAL BUILDING - GROSS	159,212 SF

RACK COUNT

TYPE	PALLET TOTAL	RACK TOTAL
GROCERY PALLETS	136	0
GROCERY RACKS (15 FT)	596	298
HARDLINE PALLETS	36	0
HARDLINE RACKS (15 FT)	340	170
CENTER SECTION		19,811 SF

COSTCO WHOLESALE

VISALIA, CA

NEC OF W. RIGGIN AVE. & N. SHIRK ST.

COSTCO WHOLESALE CORPORATION

730 LAKE DRIVE
ISSAQUAH, WA 98027
T: 425.313.8100
www.costco.com

1101 Second Ave, Ste 100
Seattle, WA 98101

206 962 6500
MG2.com

MAY 9, 2024

KEY PLAN

0 4' 8' 16' 32'

1/16" = 1'-0"

RUSSELL H. HAZZARD, ARCHITECT

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△	DATE	DESCRIPTION

22-5895-01
PM: IRENE TOSETTO
DRAWN BY: Author
MM/DD/YY

FLOOR PLAN, OPEN CANOPY

A101

3/19/2024 1:57:56 PM Autodesk Docs://Visalia_CA_Warehouse_XXX_22589501/A_22589501_Visalia_CA_Costco_V2_R23.rvt

Exhibit "F"

Kimley»Horn

Document in Support of Conditional Use Permit

Costco Warehouse, Fuel Facility and Car Wash

Northeast Corner of N. Shirk Street and W. Riggin Avenue, Visalia, CA

Operational Statement and Project Overview

Project/Site Location

The subject site is located at the northeast corner of North Shirk Street and West Riggin Avenue within the City of Visalia. The land is currently used for agriculture. The subject site is surrounded by existing agricultural uses to the south, north, east and west (west of N. Shirk Street) of the site. The Carleton Acres Specific Plan designates the areas north and east of the subject site for multifamily residential development, and it designates the area south for commercial mixed-use development. The area further south of the subject site, south of W. Riggin Avenue, is developed with existing single family residential uses.

The subject site (portion of APN 077-100-108) is approximately 18.89 total acres, proposed to comprise three parcels: a 16.15 acre parcel for the wholesale warehouse, a 1.49 acre parcel for a fuel facility and a 1.24 acre parcel for a carwash. The subject site is located within the Commercial Mixed Use (CMU) zone as part of the Phase I development of the Carleton Acres Specific Plan.

In November 2023, the Visalia City Council approved a General Plan Amendment to change the applicable land use designation to permit retail on the subject site, and approved the Carleton Acres Specific Plan. The Tulare County LAFCO approved the area's formal annexation into the City of Visalia in December 2023.

Phase I of the 507-acre Carleton Acres Specific Plan area is entitled to allow 28.7 acres of Commercial Mixed Use (CMU) development, including the project. Within the CMU zone of the Carleton Acres Specific Plan, a Conditional Use Permit (CUP) is required to allow retail of general merchandise in a building over 60,000 SF, as well to permit a fueling facility and a car wash facility. Costco seeks a CUP for these purposes.

Development Description

The project includes a 159,212 SF Costco Wholesale Building with associated landscape and parking, an approximately 4,100 SF car wash, and a 15-dispenser fuel facility. Circulation improvements include an internal east-west drive-aisle along the south of the project area, and two driveway connections to W.Riggin Avenue.

The project will be consistent with the applicable development standards as established in the Carleton Acres Specific Plan.

Costco Operations

Warehouse

The members-only Costco warehouse will include approximately 159,212 square-feet of retail floor space. Costco would offer its standard products and services for its members, such as the following:

- warehouse retail center
- tire sales and installation
- optical exams and optical sales
- hearing aid testing and sales
- food service preparation and sales
- meat preparation and sales
- alcohol sales
- propane refueling and sales

Temporary outdoor sales may occur within the parking field adjacent to the warehouse for seasonal sales, such as Christmas trees during the winter. Lastly, a promotional vehicle may be on display near the entry to the building. This vehicle will be used to promote online or offsite vehicle sales; no vehicles are proposed to be sold on site.

A maximum of 250 employees may work at any given time. Warehouse hours are expected to be Monday through Friday from 9:00 am to 8:30 pm and Saturday and Sunday from 9:00 am to 7:00 pm.

Fuel Station

The member-only Costco fuel facility proposed will include an approximately 12,680 square-foot canopy and an approximately 125 square-foot controller enclosure that will be located on the southern portion of the planting island of the fuel station to house the control equipment. One onsite ingress drive access would be provided at the northeast corner of the parcel, and one onsite egress drive access would be provided at the southeast corner of the parcel. There would be four covered fueling bays, each with two-sided fuel dispensers, providing a total of 30 fueling positions. The fuel facility is an unattended, self-service facility; however, a roaming Costco attendant will be present at all times of operation to oversee operations, manage any queues to the fuel facility, maintain the facility maintenance, and assist members. The facility includes three gasoline underground storage tanks (UST), and one additive UST. Lights would be recessed into the canopy to provide both lighting during operating hours and a lower level of security lighting after hours. Hours of operation for member fueling are expected to be daily from 5:30 am to 10:00 pm.

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Car Wash

The project will also include a Costco member-only automated car wash. The car wash structure includes a 140-foot tunnel with an attached mechanical room (+/- 4,100 square feet), a separate payment kiosk, and associated queuing area. One onsite drive access would be provided for ingress/egress located at the northeast corner of the parcel. The car wash facility will include only the automated car wash within the structure. No self-service car vacuum stations will be provided. Facility hours daily are expected to be from 5:30 am to 10:00 pm.

Building Design and Architecture

The warehouse entrance is located at grade in the southwest corner of the warehouse.

The architectural design is a contemporary, sophisticated retail structure including Costco design elements. There is an emphasis on the entry canopy design, both to provide a clearly visible way-finding design element and also to create a pedestrian-friendly way to help the public locate the building entrance from the frontage street. The building walls are composed of architectural panels of varying profiles and natural colors to break up the elevations in order to create a visually interesting design while maintaining a feel for the building type and use. The inclusion of articulated corners, shadow-creating free-standing trellises, and a varying roofline add to the complexity of the overall design.

The design of the car wash and fuel facility are consistent with the design of the warehouse. The materials for the car wash and fuel facility are also the same metal panels and masonry that are being used on the warehouse.

Site Circulation and Parking Improvements

The project includes three site access points along North Shirk Street, including a proposed signalized intersection at the center access point, two site access points along West Riggin Avenue and one access point along the future North Denton Street extension. The project will share the southernmost drive aisle with the five other retail parcels of the Carleton Acres Specific Plan, as well as access through two additional drive aisles easements through these parcels to W. Riggin Avenue. The total number of parking stalls proposed for the three Costco parcels is 904 stalls, including 20 accessible stalls, for a ratio of 5.53 stalls per 1,000 SF of buildable area. The standard stall dimensions (10’ x 18’) follow the City of Visalia guidelines for parking design (VMC 17.34.030) while the accessible stalls follow the latest guidelines for implementing the Americans with Disabilities Act (ADA).

Off Site Circulation

The Carleton Acres Specific Plan developers will construct all public street improvements required for the project. The project has frontage on North Shirk Street and the future Denton Street, as well as two site access driveways along West Riggin Avenue. North Shirk Street provides the project with two (2) right-in/right-out driveways as well as one (1) signalized intersection for full traffic movements. West Riggin Avenue provides the project with two (2) right-in/right-out driveways for shared access onsite. Denton Street provides the project with one (1) unsignalized intersection with full traffic movements.

The intersection of West Riggin Avenue and Denton Street also provides the project with a signalized intersection for full traffic movements.

Signage

The project's signage includes the Costco warehouse typical signage that consists of the signature Costco red and blue corporate colors. Signage includes two (2) 'Costco Wholesale' warehouse signs located on the west and south wall faces, one (1) entry 'Costco Wholesale' sign, and one (1) 'Tire Center' sign. The fuel facility has four (4) canopy signs and the car wash has two (2) wall signs. No monument signage is planned for the Costco project. All wall and site signage will be included as part of a Master Sign Program for the entire commercial center of the Carleton Acres Specific Plan prepared by the developer of the Specific Plan.

Loading and Waste Operations

The warehouse loading dock is located on the south side of the warehouse. Costco anticipates an average of about 10 trucks delivering goods on a typical weekday. Receiving time is from 2:00 a.m. to 1:00 p.m., averaging 2 to 3 large trucks per hour, with most of the deliveries completed before the opening time of 9:00 a.m.

The tire center, located on the west side of the building, typically will receive shipments of tires one to two times per week. Deliveries to and pickups from the tire center will be scheduled for pre-opening hours, typically about 6:00 a.m.

The bay doors will be equipped with sealed gaskets to limit noise impacts. A transformer and two compactors will also be located along the east edge of the warehouse building. In addition to the two compactors, the warehouse will utilize an additional trash enclosure (R3 Standard) to house a mixed organic and mixed recyclable waste bins in accordance with the city of Visalia waste handling guidelines. The Project's loading dock, trash compactors, transformer and waste enclosure are screened from view on Denton Street and the adjacent future residential development to the East of Denton Street by landscaping and masonry walls along the property boundary.

The fuel station, located on the southwestern corner of the site abutting N Shirk St , typically receives delivery of fuel to the fuel tanks located north of the dispensing area. Deliveries are normally made 5 to 6 times a week and are scheduled for non-peak hours in the early morning or evening and as needed mid-day.

Landscaping

The landscape design features diverse shade tree species and sweeping drifts (massing) of understory plant species at vehicular and pedestrian entryways, parking lot islands, and along street frontages. The overall design intent is to create a unifying and impactful landscape appearance to the site, as well as achieve a supportive relationship between building and landscape. In addition, the landscape design will

achieve an overall aesthetically pleasing experience, not only for Costco customers, but also for the community at large.

Selected plant materials will enhance sense of entry, wayfinding, and scale. Trees and understory plant selections feature year-long interest, visual screening, and seasonal color. Plant materials with neutral and/or vivid bloom colors along with various leaf textures and patterns will provide harmony through variety. Large canopied deciduous and semi-deciduous trees, including evergreen trees, are integrated into parking lots and along street frontages respectively. It is intended that over time, parking lot trees will provide much needed shade and reduce ambient heat during the year when solar exposure is intense. Selected plant species provide reliable screening at above grade utility locations. Pine trees along the northern perimeter planter are intended to provide reliable screening of the building façade from the adjoining property.

The planting design consists of sustainable drought-tolerant species adapted to both local and regional climate conditions, predominately of plants classified by low water use. Plant species are selected to minimize on-going and long-term care and maintenance. In addition, understory plant materials will be spaced to allow plants to grow and pleat together naturally, minimizing the need for extensive pruning maintenance such as shearing and hedging, thus reducing long-term landscape waste.

Decorative accent rock mulch (3/4” size) will be specified within all planter areas. This material will provide sufficient moisture retention within planters, eliminate semi-annual or annual mulch replenishing and/or replacement, minimizes weed growth, and require very low long-term care and maintenance.

The site irrigation design will consist of an efficient low flow, point of source system designed to efficiently provide adequate watering to support plant growth and ensure deeply rooted plant material while avoiding excess water application. The system will be programmable, allowing operation during late night and/or early morning hours, with multiple start times and cycles. The irrigation system will comply with the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO).

Lighting

The site’s parking lot will be illuminated with high efficiency LED fixtures affixed to a 36’-0” tall light pole. The lighting fixtures will be downward facing wall-mounted LED fixtures designed primarily for security on the warehouse, car wash and fuel facility. The parking lot lights will be timer-controlled to limit lighting after the warehouse has closed and most employees are gone from the warehouse. Parking lot lighting will remain on after hours to provide security and emergency lighting only along the main driveways. Lighting fixtures will also be located on the building approximately every 40 feet around the exterior of the building to provide safety and security. Parking and site lighting will incorporate the use of cutoff lenses to keep light from overflowing beyond the Costco site boundaries. All lighting systems are designed to comply with the 2022 California Energy Code standards.

Utility Infrastructure

The Carleton Acres Specific Plan developers will construct utility improvements to service the uses and connect to existing available utilities adjacent to the subject site. Water is provided by the California Water District and sewer service is provided by the City of Visalia. There is an existing water main located on W. Riggin Avenue, and a water line will be extended to the north property line on N. Shirk Street as part of the associated Carleton Acres development improvements. Sewer will also be extended along N. Shirk Street as part of the associated Carleton Acres development improvements in order to service the project.

Grading

The project onsite grading will be designed to applicable development requirements and the recommendations of the project Geotechnical report that address Costco's specific uses. To the extent practical, onsite grading will be designed to balance earthwork cut and fill. Transitional slopes from existing grades along the perimeter of the property shall not exceed a slope of 2H:1V. Building finished floors will be designed at high points within the site and provide a minimum of eighteen inches above the one hundred year flood plain. Site grades around the warehouse and throughout the parking field will seek to provide a maximum slope of two percent and minimum slope of one percent where feasible. Grading shall be in conformance with local and federal ADA requirements and provide the required accessible routes.

Storm Drainage

The Carleton Acres Specific Plan developers will construct a regional drainage basin facility, with improvements allowing for the drainage of the subject site. Water runoff will enter inlets onsite and be directed to a storm drain system along N. Shirk Street, draining at a temporary or permanent regional drainage basin facility. All onsite drainage systems will be designed to meet Visalia Municipal Code standards. A Stormwater Control Plan (SCP) will be included with the grading and drainage plans.

Entitlement Conformance Document

Site Plan Review

The applicant submitted a Site Plan Review Application (SPR24029) to the City of Visalia in February 2024, and the City issued a "revise and proceed" decision on February 21st, 2024. The applicant received Site Plan Review comments from the City on March 13th, 2024. The following table outlines the City development standards applicable to the project and site plan conformance.

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Development Standard Table

	Requirement	**Response**
General Plan Land-Use	Commercial Mixed-Use	Commercial Mixed-Use
Zoning	Carleton Acres Specific Plan	Carleton Acres Specific Plan
Development Standards: Setbacks	Carleton Acres Specific Plan 4.5 ● 10’ Setback on Shirk Rd ● 10’ Setback on Denton St ● Rear Setback: 0’ (5’ Landscape, 15’ when abutting residential) ● Side Setback: 0’ (5’ Landscape, 15’ when abutting residential)	**In Conformance:** ● 15’ Setback on N. Shirk St ● 10’ Setback on Denton St ● 15’ Rear Landscape Setback
Development Standards: Parking and Loading	Carleton Acres Specific Plan 6.8.2: ● City of Visalia Zoning Ordinance shall be used to determine required parking for each Commercial site ● Shade trees should be distributed throughout the parking area ● Minimum of 10% of the parking lot with more than 20 parking spaces shall be landscaped and maintained ● Minimum 5’ landscape strip should be provided outside the public right-of-way ● Parking areas along public streets or when across from residential property should be screened ● No parking should be provided in a required front/rear/side yard ● All parking lots should be designed to provide a tree canopy to provide shade in hot seasons and sunlight in winter months VMC 17.34: ● All parking shall have adequate ingress/egress to street or alley ● Parking area, aisles and access drives shall be surfaced with an asphalt concrete surfacing of 2” minimum thickness on a 4” untreated rock base. The subgrade shall be compacted to minimum compaction of 90%. Minimum slope in the direction of drainage shall be 12” per 100’ and minimum slope of concrete gutters shall be 3” per 100’	**In Conformance:** ● Shade trees are distributed throughout the parking area. ● A minimum of 10% of the parking lot is landscaped and will be maintained. ● The site plan provides a minimum 5’ landscape strip outside of the public right-of-way. ● Parking along public streets and across from residential property is screened. ● Trees are utilized in the parking lot to provide shade in hot seasons and sunlight in winter months. ● Six access points (two ingress/egress points on W Riggin Ave, one on Denton St. and three on N. Shirk St.), including one signalized intersection provide adequate site access ● All parking is located within the required setback buffers on Denton St., N. Shirk St and abutting CMU parcels ● Minimum parking standard (1 per 300 SF of building area): 531 stalls (904 stalls in Costco project)

	Requirement	Response
	● General retail stores shall have one parking space for each 300 SF of building area ● No parking areas shall be located within a required front setback or within a street side setback of a corner lot ● Parking spaces for “compact automobile” will be permitted providing each parking space is not less than 15’ in length and 17’ in width ● The number of compact parking spaces shall not exceed 30% of the total parking spaces of an establishment and there should be no more than 4 contiguous stalls ● New parking facilities shall promote and be evaluated as part of an overall program to implement low impact development features on-site that reduce impermeable surfaces and increase filtration. The implementation and design of low impact development features will be determined by the Site Plan Review Committee	● Parking areas, aisles and access drives will provide pavement sections and grades that meet or exceed the minimum City standards. ● The fuel station and car wash facilities will provide stormwater pretreatment measures.
Development Standards: Landscaping	Carleton Acres Specific Plan 6.8: ● Site Landscape Standards: ○ Each landscape and open space should incorporate a unifying theme ○ Trees should serve the dual purpose of providing shade to protect from the sun and defining the outdoor spaces within the community ○ Landscape elements at the edges and buffer areas to enhance the projects visual appeal and create a sense of privacy ○ Landscaping of open spaces should enhance architecture and contribute to the overall aesthetic of the development	**In Conformance:** ● All landscape areas will incorporate similar plant patterns, textures, scale, form, and colors to create a distinctive unifying theme. ● The specified trees will provide shading within parking lots. ● Landscaping along perimeter areas will provide a consistent overall aesthetic and visual appeal to the development. ● Landscaping of open spaces will enhance architecture and contribute to the overall aesthetic of the development.

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	Requirement	Response
	○ Arbors, trellises and other elements may be incorporated to enrich the pedestrian experience and add to the overall community ambiance ○ Off-street parking along streets should be screened with trees and shrubs ○ The placement of trees and plants should not interfere with lighting, fire hydrants or fire alarm boxes ● Plant Material and Planting Design: ○ Provide simple and bold landscaping designs that incorporate low water and/or drought-tolerant plants ○ Landscaping along public streets should blend with the developed parcels ○ Street trees an average of 40-50’ on center along frontages should be provided. All street trees to be a minimum 15-gallon size. Ground cover to be placed 36” on center maximum spacing ○ All landscape areas should be protected with 6” curbs ○ Provide a mix of planting material sizes ○ Select plants suitable to soil and climatic conditions of the site ○ Use low water and/or drought-tolerant plants to minimize water-use ○ Space trees and shrubs considering their mature size ● Irrigation Standards: ○ Provide adequate irrigation while conserving water	● Off-street parking is screened with trees and shrubs. ● Trees and understory planting are located to avoid lighting, fire hydrants, and fire alarm boxes. ● Site landscape design will include bold drift/massing of drought-tolerant understory plant materials. ● Site landscaping along public streets will blend in with the developed parcels. ● Street trees are spaced at a minimum 40’ on-center spacing. All trees are specified at 24” box sizes. ● Ground cover is placed at 36” on center maximum spacing. ● All planter areas (excluding sidewalk locations) are protected with 6” ht. curbing. ● Plant sizes are specified to provide a diversity in heights and widths. ● A soils report will be conducted to aid in plant selection. All specified plant species selections are suitable to climate and soil conditions. ● The majority of specified plant species are low water use and/or drought tolerant. ● Trees and understory plant species are sized and spaced to minimize hedging and/or pruning. ● The irrigation system shall be operated by an automatic irrigation

	Requirement	Response
	○ with a permanent underground irrigation system operated by an automatic irrigation controller ○ native or drought-tolerant plants are used a drip irrigation system should be installed ○ Apply irrigation in short intervals to reduce runoff to paved areas	controller that runs in short intervals to reduce runoff and support water conservation goals while providing adequate irrigation for landscaping. ● Drip irrigation systems shall be installed for native and drought-tolerant plants.
Development Standards: Walls	Carleton Acres Specific Plan 6.8.4 ● Use walls and fences for security, visual screening and aesthetic purposes. Water Storage/Recharge Basin should be fenced and only allow access for maintenance purposes ● Walls and fences should be coherent with the architecture of adjacent building ● Use landscaping to vary walls. Walls should be covered with vine to discourage graffiti and enhance the appearance of fence and/or wall ● When commercial use is adjacent to residential a masonry wall not less than 7'4" should be required ● Walls and fences for residential at the front setback should be maximum 3' tall and complement the architecture	**In Conformance:** ● 7'-4" masonry wall located outside of the setback along the eastern and northern property lines which are adjacent to future residential uses. ● 10'-0" wall is located outside of the setback along the eastern property boundary adjacent to the warehouse loading/unloading operations ● 12'-0" wall is located directly adjacent to the loading dock well. ● 8'-0" wall is located directly around the warehouse trash compactors. ● 8'-0" wall is located around the waste and recycling bins. ● No water storage/recharge basins are located on the subject site ● Walls and fences will provide coherent aesthetics with the project warehouse architecture ● Landscaping will provide vines along wall frontages

	Requirement	Response
		to discourage graffiti and enhance the appearance
Development Standards: Signs	Carleton Acres Specific Plan 6.9 ● All signage within Carleton Acres must adhere to the architectural and landscape character of the community ● The Carleton Acres logo and type style should be used uniformly on all public area signs ● Commercial signs must refer to the City of Visalia's Sign Ordinance (VMC 17.48) VMC 17.48.100: ● Wall signs: ○ Maximum area 2 SF x ln. ft. of frontage (max. 150 SF) ○ Maximum horizontal projection from wall: 6" ○ Maximum height: height of the building	● The project will include a total of two (2) 'Costco Wholesale' warehouse signs located on the west and south wall faces, one (1) entry 'Costco Wholesale' sign, and one (1) 'Tire Center' sign. The fuel facility has four (4) canopy signs and the car wash has two (2) wall signs ● The project signage will be in conformance with the Carleton Acres Specific Plan ● Project signage will be included as part of a master sign program for the commercial area of the Carleton Acres Specific Plan
Development Standards: Lighting	Carleton Acres Specific Plan 6.10 ● Architectural lighting should serve to enhance building designs while also providing adequate illumination for pedestrian safety ● Illustrate the entrance of buildings and parking areas ● Private development lighting should complement and not conflict with public lighting ● Special accent lighting may be used on architectural details and signage throughout Carleton Acres ● More than 0.5 lumens should not be exceeded at any property line	**In Conformance:** ● Lighting will be used to illuminate not only parking areas but approximately 40' around the exterior of the building to provide safety and security ● Wall lighting is used as accent lighting on warehouse and car wash exteriors ● No more than 0.5 lumens are exceeded at any property line, not conflicting with public lighting
Development Standards: Building Height	Carleton Acres Specific Plan 4.5: ● 50' maximum	**In Conformance:** ● 32' height

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Conditional Use Permit

The City of Visalia requires a Conditional Use Permit (CUP) application to allow retail of general merchandise over 60,000 SF, a fueling facility and car wash in the Commercial Mixed-Use zone. Under VMC 17.38.110(A), the Planning Commission may grant a CUP application if the Planning Commission makes the following findings:

1. That the proposed location of the conditional use is in accordance with the objectives of the zoning ordinance and the purposes of the zone in which the site is located;
    a. The proposed conditional uses are in accordance with the objectives and purposes of the Commercial Mixed-Use zone and the Carleton Acres Specific Plan. The proposed conditional uses are located within the Commercial Mixed Use land designation as part of the Phase I development of the Carleton Acres Specific Plan. The Carleton Acres Specific Plan describes the Commercial Mixed-Use Area as a "dynamic space" and a "commercial hub," featuring a major anchor tenant and mix of businesses. The Carleton Acres Specific Plan permits Fuel Storage, Car Washing, Automotive and Retail of General Merchandise over 60,000 SF as conditional uses in the Commercial Mixed-Use zone. The proposed conditional uses contribute to the overall commercial development concept of the Phase I development of the Carleton Acres Specific Plan.

2. That the proposed location of the conditional use and the conditions under which it would be operated or maintained will not be detrimental to the public health, safety or welfare or materially injurious to properties or improvements in the vicinity.

    a. There is no evidence that the proposed conditional uses would have operations that are detrimental to the public health, safety or welfare of properties and improvements within the vicinity. Further, the project was fully evaluated within and is consistent with the findings in the Carleton Acres Specific Plan EIR and the approved Carleton Acres Specific Plan.

CEQA Compliance

The subject site is within the area analyzed by the certified Carleton Acres Specific Plan EIR, and the project's uses and development intensity are consistent with both the Specific Plan's requirements and the EIR's analysis. Since the Carleton Acres Specific Plan EIR was approved in December 2023, the subject site plan has had minor changes, which include:

- the warehouse has been mirrored and shifted east approximately 400';
- the car wash has been rotated 90 degrees clockwise, locating the car wash approximately 230' from the northern property line;
- the fuel station has rotated 180 degrees, with the traffic flow now circulating north to south;
- an additional access drive with signalized intersection has been added along Shirk Street, now aligning with future western development driveways;
- the building footprint has remained nominally the same, with slight modifications to the front entry canopy decreasing the overall footprint by approximately 1,200 SF;

- the net parcel area has remained nominally the same, increasing by approximately 0.7 acres.

Additional studies have been prepared to address these site plan updates and comply with City and EIR requirements:

- Traffic Impact Analysis prepared by Kittleson on January 2, 2024, approved by the City of Visalia on January 10, 2024;
- Environmental Noise Impact study prepared by Acoustical Engineering Services in March 2024;
- Health Risk Memorandum prepared by Ramboll Group on March 29th, 2024 concerning project health risk.

The additional study findings do not identify any new or more severe environmental impacts associated with the proposed project than those that were studied in the EIR. Additionally, there have been no new changes to the feasibility of mitigation measures or alternatives analyzed in the EIR. No new information, changed circumstances, or other changes are applicable that would require revisions to the EIR. As a result, none of the criteria requiring subsequent environmental review under the CEQA are present such that the Carleton Acres Specific Plan EIR can be applied to the Costco project and CUP approval.

Project Conclusion

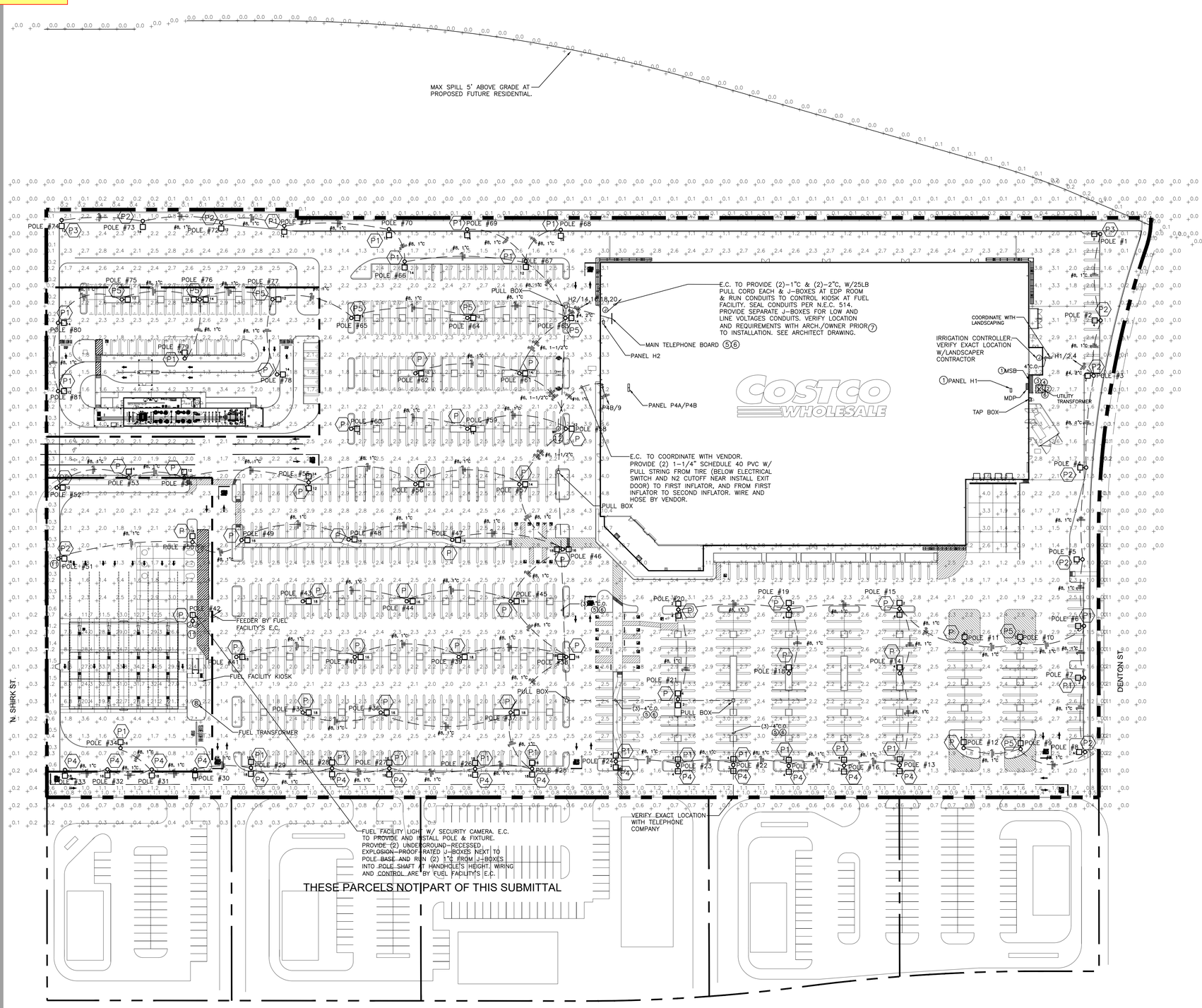
This project creates a strong commercial anchor at the south-west gateway to the Carleton Acres Specific Plan area, and provides an additional location to serve the local and surrounding membership base. The Costco project will not only provide an amenity for the future residents of Carleton Acres, but it will also serve as an economic development driver for the larger Visalia community. The project will help create new jobs and increase the contribution to the City's tax base.

Exhibit "G"

SITE LIGHTING FIXTURE SCHEDULE

ALL LIGHT FIXTURES SHALL HAVE FACTORY INSTALLED DISCONNECTED MEANS PER LATEST NEC CODE

TYPE	MANUFACTURER	NUMBER	LAMPS	MOUNT	WATT	REMARKS
P	COOPER MCGRAW EDISON	GALN-SA4B-740-U-5WQ-BZ (40K COLOR TEMP.)	LED	VALMONT FIBERGLASS/ FIBERGLASS POLE	164	36'-0" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED. ROUND TAPERED FIBERGLASS/FIBERGLASS POLE (VALMONT COSTCO-100-10-**36** POLE) (SEE PLAN NOTES). NUMBER OF HEADS SHALL BE PER PLAN. SEE DETAIL SHEET SE-1. FIXTURE SHALL BE POWDER PAINTED, ELECTRO-STATIC APPLICATION POLE SHALL HAVE A MIN EPA=10 FOR 100 MPH WIND
P1	COOPER MCGRAW EDISON	GALN-SA2B-740-U-SL3-HSS-BZ (40K COLOR TEMP.)	LED	VALMONT FIBERGLASS/ FIBERGLASS POLE	82	
P2	COOPER MCGRAW EDISON	GALN-SA3B-740-U-SL4-HSS-BZ (40K COLOR TEMP.)	LED	VALMONT FIBERGLASS/ FIBERGLASS POLE	121	
P3	COOPER MCGRAW EDISON	GALN-SA3B-740-U-SLL-HSS-BZ (40K COLOR TEMP.)	LED	VALMONT FIBERGLASS/ FIBERGLASS POLE	121	
P4	COOPER MCGRAW EDISON	GALN-SA1B-740-U-T3-BZ (40K COLOR TEMP.)	LED	VALMONT FIBERGLASS/ FIBERGLASS POLE	44	
P5	COOPER MCGRAW EDISON	GALN-SA4B-740-U-5NQ-BZ (40K COLOR TEMP.)	LED	VALMONT FIBERGLASS/ FIBERGLASS POLE	164	

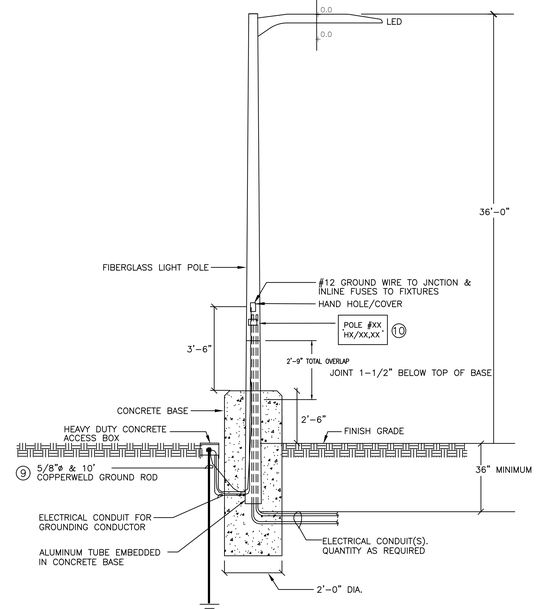


SITE LIGHTING PLAN

SCALE: 1" = 50'-0"

SYMBOL LEGEND

- POLE LIGHT
- AIMED OPTICS POLE LIGHT



NOTE: PROVIDE CONCRETE J-BOX AS REQUIRED. THIS DETAIL IS FOR ELECTRICAL CONDUITS ROUTING ONLY. SEE STRUCTURAL DRAWINGS S0.2 FOR DETAILS.

POLE DETAIL

SCALE: NTS

PLAN NOTES:

1. SECONDARY SERVICE LATERAL. VERIFY EXACT ROUTING PRIOR TO BID. SEE ONE LINE DIAGRAM. COORDINATE WITH THE POWER COMPANY FOR ALL REQUIREMENTS FOR CONNECTION OF THE TRANSFORMER. SEE NOTE
2. TRANSFORMER IS PROVIDED BY POWER CO. E.C. SHALL COORDINATE WITH POWER COMPANY FOR ALL INSTALLATION OF TRANSFORMER & ITS CONNECTION. PROVIDE GUARD POSTS, TRANSFORMER PAD, ETC. AS REQUIRED. MEET ALL POWER COMPANY REQUIREMENTS, INCLUDE ALL CHARGES IN BID.
3. UTILITY METERING. INSTALL ALL METERING EQUIPMENT SUPPLY BY POWER CO. AS REQUIRED.
4. PRIMARY CONDUITS AND TRENCHING ARE PROVIDED BY G.C. / E.C. VERIFY EXACT LOCATION AND REQUIREMENT WITH THE UTILITY COMPANY PRIOR TO BID. OBTAIN ALL CHARGES PRIOR TO BID, INCLUDE IN BID. SEE CIVIL DRAWINGS FOR EXACT LOCATION. PROVIDE 6" BED OF CLEAN SAND FOR PRIMARY CONDUIT. COVER WITH 12" OF CLEAN SAND. COVER WITH CABLE WARNING TAPE AND BACKFILL. PROVIDE HEAVY DUTY TRAFFIC RATED COVERPLATE FOR PULL BOXES.
5. PROVIDE AND INSTALL TELEPHONE TERMINAL BOARD AS DIRECTED BY THE TELEPHONE COMPANY. ALLOW (1) – 4' X 8' X 3/4" EXTERIOR PLYWOOD BOARD WITH (2) COATS VARNISH FOR BIDDING. THREE (3) 4" SCHEDULE 40 ENTRANCE CONDUITS AT A DEPTH OF 36" MIN. FROM THE TELEPHONE BOARD TO THE THE TELEPHONE COMPANY TERMINATION POINT, A PULL WIRE MUST BE PLACED IN ALL TELEPHONE CONDUITS FOR PROOFING AND PULLING PURPOSES. ALSO PLACE A STAKE AT THE END OF ALL TELEPHONE ENTRANCE CONDUITS. VERIFY EXACT LOCATION AND REQUIREMENTS PRIOR TO BID. SEE SHEET "E-4" FOR THE TELEPHONE BOARD LOCATION. PROVIDE A #6 COPPER GROUND WIRE FROM TELEPHONE BOARD TO BUILDING GROUNDING SYSTEM.
6. GENERAL & ELECTRICAL CONTRACTORS SHALL COORDINATE WITH, POWER & TELEPHONE COMPANIES TO BRING THE POWER & TELEPHONE SERVICES TO THE BUILDING.
7. E.C. TO PROVIDE J-BOX(ES) FOR FUEL FACILITY CONDUITS AS REQUIRED FOR EVERY 250' OR AFTER (2) 90 DEGREES BENDS. SEAL ALL CONDUITS PER CODE. SEE ARCHITECTURAL & CIVIL DRAWINGS FOR ROUTING.
8. TYPICAL FUEL FACILITY TRANSFORMER LOCATION. G.C. AND E.C. SHALL VERIFY REQUIREMENTS AND LOCATION WITH ARCHITECT. E.C. SHALL COORDINATE WITH POWER COMPANY FOR ALL INSTALLATION OF TRANSFORMER & ITS CONNECTION. PROVIDE GUARD POST, TRANSFORMER TRENCHING, PRIMARY CONDUIT, ETC. AS REQUIRED. MEET ALL POWER COMPANY REQUIREMENTS, INCLUDE ALL CHARGES IN BID.
9. E.C. TO PROVIDE COPPERWELD 5/8" ø X 10' LONG GROUND ROD AT THE LIGHT POLE TYP. BOND GROUND WIRES TO GROUND ROD.
10. POLE MANUFACTURER TO PROVIDE POLE ID ON THE HANDHOLE COVER. LABEL POLE NUMBER AND CIRCUIT NUMBER PER PLAN. EXAMPLE: POLE#1, H2/54,56. 2"X4" LABEL. 1/4" HIGH ENGRAVED LETTERS. COVER SHALL BE SECURED WITH TAMPER-PROOF SCREWS. E.C. TO VERIFY CIRCUIT NUMBERS PER PLAN AND ENSURE THE CORRECT INSTALLATION OF LABEL / COVER FOR EACH POLE.
11. E.C. TO SEAL UNDERGROUND CONDUITS WITHIN 10' OF ENTERING GROUND ON BOTH ENDS. SEAL POLE AND ASSOCIATED J-BOX. PROVIDE EXPLOSION-PROOF-RATED J-BOX AND OTHER ELECTRICAL DEVICES NEAR FUELING FACILITY. REFER TO NEC ARTICLE 514.
12. E.C. TO MAKE ALL FINAL CONNECTIONS FOR ALL NITROGEN DISPENSER.

ISSUED FOR C

PROJECT STATUS: ISSUED FOR QA

△	DATE	DESCRIPTION
	04/22/24	ISSUED FOR QA
	05/16/24	ISSUED FOR QA

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NEW WAREHOUSE

VISALIA, CA 93291

COSTCO WHOLESALE

#___

TEI #: 23-284
PM: NV
CHECKED BY: JGM
ISSUED: 05/16/24

SITE ELECTRICAL PLAN, DETAIL, LIGHTING FIXTURE SCHEDULES, AND NOTES

SE-1

5/7/2024 10:19:47 AM C:\Users\NVan.TEI\Documents_284_MEP_CENTRAL_2023_NVan4NMG6.rvt

Exhibit "H"

KITTELSON & ASSOCIATES
155 Grand Avenue, Suite 505
Oakland, CA 94612
P 510.839.1742

Technical Memorandum

January 2, 2024

Project# 27808

To: Leslie Blair – City of Visalia

From: Grace Carsky; Aaron Elias, PE; Amy Lopez

CC: Sean Anderson – Costco Wholesale

RE: Visalia Costco Warehouse Focused Traffic Study

Executive Summary

Costco Wholesale (Costco) is proposing to construct an approximately 161,000-sf warehouse, 32-fueling position fuel station, and car wash ("Project") located in the northeast quadrant of the Shirk Street/ Riggin Avenue intersection in Visalia, California. The existing site is vacant and part of the Carleton Acres Specific Plan area, which will be a new mixed-use development with commercial, residential, recreational, and educational uses.

Costco is exploring an access modification from what was identified in the Carleton Acres Specific Plan and studied through the traffic study for the Specific Plan. The site access modification would include the addition of a signalized full-access driveway on Shirk Street. This technical memorandum evaluates the effect of this proposed signalized driveway on both Phase 1 and Phase 3 traffic conditions of the Carleton Acres Specific Plan. Recommendations for improvements to the site are also summarized below.

Analysis Scenarios

Kittelson & Associates, Inc. (Kittelson) analyzed traffic operations for the PM peak hour and Saturday mid-day peak hour conditions at the study intersections listed later in this memo. Project Phase I in this analysis involved use of 2023 background volumes from the Carleton Acres traffic study. Thus, Project Phase I and its Alternative correspond to the 2023+Project (Phase I) scenario in that study. Project Phase III in this analysis involves use of 2046 background volumes and other specific plan development volumes from the Carleton Acres traffic study. Thus, Project Phase III and its Alternative correspond to the 2046+Project (Phases I, II, and III) scenario in that study.

This study includes the following analysis scenarios and assumptions:

1. Project Phase I – 2023 background volumes from Carleton Acres traffic study
    a. Assume two of the five commercial parcels are developed as fast-food restaurants (ITE Land Use Code 934) and three of the five commercial parcels are developed as a shopping center.[1]
2. Project Phase I – Alternative
    a. Assume two of the five commercial parcels are developed fast-food restaurants (ITE Land Use Code 934) and three of the five commercial parcels are developed as a shopping center.
    b. Assume an additional full-access driveway with traffic signal (Shirk Street and Access Driveway F).
    c. Assume no southbound left-turn (SBL) at the Shirk Street and Driveway Access A intersection.
3. Project Phase III – 2046 background volumes and other specific plan development volumes from Carleton Acres traffic study

[1] The Carleton Acres traffic study assumed all five commercial parcels are developed as a shopping center (ITE Land Use Code 821).

   a. Assume two of the five commercial parcels are developed as fast-food restaurants (ITE Land Use Code 934) and three of the five commercial parcels are developed as a shopping center.
4. Project Phase III – Alternative
   a. Assume two of the five commercial parcels are developed fast-food restaurants (ITE Land Use Code 934) and three of the five commercial parcels are developed as a shopping center.
   b. Assume an additional full-access driveway with traffic signal (Shirk Street and Access Driveway F).
   c. Assume no SBL at the Shirk Street and Driveway Access A intersection.

Phase I Operations

Intersection Operations

In Phase I, intersections operate at an LOS ranging from A to F in the Phase I PM peak hour and the Saturday midday peak hour. The following signalized intersections show improved v/c ratios and vehicle delay in the Phase I Alternative scenario for both the PM and Saturday midday peak hours:

- Shirk Street/Riggin Avenue (Intersection 38)
- Riggin Avenue/Denton Street (Intersection 39)

Queueing

The following intersections are anticipated to have left- or right-turn queues over 300 feet in the PM peak hour:

- Shirk Street/Riggin Avenue (#38) – westbound through-left turning movement
- Riggin Avenue/Denton Street (#39) – southbound left turning movements

The following intersections are anticipated to have left- or right-turn queues over 300 feet in the Saturday peak hour:

- Shirk Street/Riggin Avenue (#38) – westbound through-left turning movements
- Riggin Avenue/Denton Street (#39) – southbound left turning movements

The proposed access on Shirk Street (Access F, Figure 1) enables a redistribution of Costco member traffic, thereby reducing queues at these intersections for almost all approaches. In the PM peak hour, queues are anticipated to increase at the Riggin Avenue/Denton Street eastbound through lane. In the Saturday midday peak hour, queues are anticipated to increase at the Shirk Avenue/Riggin Street westbound through lane. The anticipated queue (476 feet) would spillback to Site Access C.

Phase III Operations

Intersection Operations

In both the PM and Saturday midday peak hours, most intersections operate between LOS A and F. The Shirk Street/Sedona Avenue intersection (#26) and Shirk Street/Riggin Avenue intersection (#38) operate between LOS E and F in the PM and Saturday midday peak hours.

The following signalized intersections show improved v/c ratios and/or vehicle delay in the Phase III Alternative scenario for both the PM and Saturday midday peak hours:

- Shirk Street/Riggin Avenue (#38)
- Riggin Avenue/Denton Street (#39)

Queuing

The following intersections are anticipated to have queues over 300 feet in the PM peak hour:

- Shirk Street/Riggin Avenue (#38) – northbound right and westbound left-through movements
- Riggin Avenue/Denton Street (#39) – southbound left-through movements

The following intersections are anticipated to have queues over 300 feet in the Saturday peak hour:

- Shirk Street/Riggin Avenue (#38) – northbound right and westbound left-through movements
- Riggin Avenue/Denton Street (#39) – southbound left-through movements

The proposed access on Shirk Street (Access F, Figure 1) reduces queues at these intersections for some approaches. In the PM and Saturday peak hours, queues are anticipated to increase at the Shirk Street/Riggin Avenue intersection for certain movements. In the PM peak hour, the following lanes are anticipated to experience queues over 300 feet:

- Shirk Street/Riggin Avenue (#38) – southbound left-turn lane (562 feet) and westbound left-turn lane (473 feet)

In the Saturday midday peak hour, the following lanes are anticipated to experience queues over 300 feet:

- Shirk Street/Riggin Avenue (#38) – westbound left-turn lane (782 feet)

Site Access Geometric Design Review

Left-turn storage length. The City of Visalia Procedures for Traffic Impact Analysis requires all arterial left-turn pockets to have a storage length of at least 300 feet. The southbound left-turn lane at Access F is anticipated to experience queues of up to 145 feet in Phase III. A southbound left-turn pocket of at least 150 feet is recommended for the Access F driveway. The Shirk/Riggin Industrial Development has proposed a 300' northbound left-turn pocket at the Shirk Street/Sedona Avenue intersection. Spacing between Access F and the intersection at Sedona Avenue is approximately 600' and could accommodate the left-turn pockets of 150' and 300'.

Deceleration lanes. The City of Visalia Procedures for Traffic Impact Analysis requires all roadways with a speed limit of 35 miles per hour or greater to be analyzed for deceleration lanes. The American Association of State Highway and Transportation Officials (AASHTO) Policy on Geometric Design of Highways and Streets Manual (Green Book) provides guidance on recommended deceleration lane lengths based on the posted speed of the roadway (see Table 9-20). Shirk Street and Riggin Avenue are arterial roadways with posted speed limit of 55 mph today. However, with development of the Carleton Acres Specific Plan area, the speed limit is anticipated to decrease to 40 mph. Based on AASHTO guidance and queuing results in Table 13 through Table 16, the suggested deceleration lane length is 265 feet for all access driveways and intersections on Shirk Street and Riggin Avenue.

Due to constraints associated with spacing of site accesses relative to one another and/or to an adjacent intersection, it may not be feasible to construct deceleration lanes of 265 feet on Shirk Street at Accesses A, B, or F. Therefore, at these site accesses, some vehicle deceleration would occur in the through lane before vehicles shift into the deceleration lane to further decelerate and make a right-turn into the site. Given the anticipated speed limit in the area and the suburban nature of land development anticipated with the development of the Carleton Acres Specific Plan and the Shirk-Riggin Industrial Park on the west side of Shirk Street, such deceleration in the through lane is not expected to impede traffic flow along Shirk Street.

Signal spacing. As the Carleton Acres Specific Plan area develops, Shirk Street will be improved to a four-lane facility with a raised median. The City of Visalia Engineering Design Standard P-12 states, "Full median openings are scheduled for one-half mile intervals. Any proposed median openings at less than one-half mile must be approved by the City engineer. Signalized intersections are scheduled for arterial/arterial, arterial/collector, and collector/collector intersections which typically occur at one-half mile intervals. All traffic signal locations must be approved by the City engineer based on traffic engineering findings."[2]

The Project proposes Access F: a signalized, full-access intersection on Shirk Street approximately 650 feet north of the signalized intersection at Riggin Avenue and approximately 600 feet south of the planned ¾ intersection at the future Sedona Avenue to the north of the Project. The intersection would also provide full access to the Shirk/Riggin Industrial Park proposed for development on the west side of Shirk Street. Per discussions Kittelson had with City traffic engineering staff in March 2023, the 650-foot spacing from the

[2] City of Visalia Engineering Design and Improvement Standards, 2016. https://www.visalia.city/civicax/filebank/blobdload.aspx?BlobID=34583

signal at Riggin Avenue would allow for progressive signal timing, thereby enabling a consistently managed flow of traffic between signals that are spaced closer than one-half mile.

Access spacing. City Engineering Design Standard C-32 states the minimum distance of a driveway from an intersection on an arterial is 200 feet. As shown in Figure 1, Access F is a full-access intersection approximately 650 feet north of the Shirk Street/Riggin Avenue intersection and approximately 600 feet south of the Shirk Street/Sedona Avenue intersection. The spacing between the proposed Access F driveway and the adjacent intersections complies with City Engineering Design Standard C-32. Right-in/right-out Access B is approximately 380' south of Access F, and right-in/right-out Access A is approximately 240' north of Access F. The distance between the Access B and Access F right-in/right-out driveways are sufficient to accommodate decelerations lanes of 265', as recommended in the AASHTO Green Book; however, the distance between Access F and Access A driveways is not sufficient for the recommended deceleration lane length. While the spacing of Accesses A and B relative to Access F do not meet City Engineering Design Standard C-32 for 500' spacing between driveways, the provision of deceleration lanes and restriction to right-in/right-out only access reduces the potential conflicting movements that could occur between vehicles entering and exiting the Project development and through vehicles on Shirk Street. Therefore, conditions would be acceptable even while not meeting the standard driveway spacing.

Suggested Improvements

Based on the intersection operations and queueing analysis findings, Kittelson developed site access and roadway improvements that would support and facilitate ingress and egress for the commercial development. These suggested improvements are presented in Table 1 through Table 4 and are presented alongside the improvements suggested in the Carleton Acres traffic study. A summary of recommendations for Phase I and Phase III are provided in Appendix A.

Several actions need to take place before Costco's opening day. After the Tulare County Local Agency Formation Commission (LAFCO) approves annexation of the Project property and other portions of Carleton Acres into Visalia (expected in the first quarter of 2024), Costco would proceed with next-steps for City approval of the site development, eventually obtaining building permits and breaking ground for construction.

There are existing plans to widen Shirk Street from one to two northbound lanes and Riggin Avenue from two to four travel lanes (two lanes each in the westbound and eastbound directions). These roadway widenings require relocation of utility poles along Shirk Street and Riggin Avenue. The City has applied to Southern California Edison (SCE) for the pole relocation. The application is currently under SCE review. This transportation study recommends construction of all Phase I off-site improvements listed in Table 1 and Table 2 be completed before Costco's opening day.

The overall timeline for land annexation, utility pole relocation, roadway widening, and suggested intersection improvement construction is in flux and will determine the start date for Costco's on-site construction. On-site construction of the Project is anticipated to take six months. Costco Wholesale intends to open the warehouse, fuel station, and car wash only after the roadway widening and intersection improvements are completed.

TABLE 1. SUGGESTED INTERSECTION IMPROVEMENTS

ID	Intersection	Phase I[1] Recommendations		Phase III Recommendation	
		Carleton Acres Traffic Study	Costco Traffic Study	Carleton Acres Traffic Study[3]	Costco Traffic Study
38	Shirk Street-Riggin Avenue	Construct traffic signal	Confirmed: construct traffic signal	Construct EBT	Construct EBR and WBL
39	Denton Street-Riggin Avenue	None	Construct traffic signal Construct second SBL	Traffic signal in place: constructed by year 2028, Phases I + II	No further recommendations
80	Shirk Street-Central Access Driveway (Site Access F)[2]	Not analyzed	Construct traffic signal	Not analyzed	No further recommendations

[1] Phase I recommendations should be in place before Costco's opening day.
[2] Intersection 80 was only analyzed in the Costco traffic study.
[3] Includes recommendations that were made as part of the Phase II analysis in the Carleton Acres traffic study.

TABLE 2. SUGGESTED ROADWAY IMPROVEMENTS

Roadway	Phase I[1] Recommendations		Phase III Recommendation	
	Carleton Acres Traffic Study	Costco Traffic Study	Carleton Acres Traffic Study	Costco Traffic Study
Shirk Street	None	Widen to two-lanes NB, Riggin Avenue to Sedona Avenue	None	No further recommendations
Riggin Avenue	Widen to four-lane cross section, Shirk Street to Akers Street	Confirm: Widen to four-lane cross section, Shirk Street to Akers Street	None	No further recommendations

[1] Phase I recommendations should be in place before Costco's opening day.

TABLE 3. SUGGESTED NUMBER OF LANES AND MINIMUM TURN LANE LENGTHS – OPENING DAY

ID	Intersection	Control	Recommended Number of Lanes (Recommended Minimum Turn Lane Length)											
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
26	Shirk Street & Sedona Avenue	TWSC	--	2	1 (265 ft.)	--	1	--	--	1	--	--	--	1
27	Denton Street & Sedona Avenue	RBT	--	1	--	--	1	--	--	1	--	--	1	--
38	Shirk Street & Riggin Avenue	Signalized	1 (60 ft.)	2	1 (265 ft.)	1 (75 ft.)	1	1 (265 ft.)	1 (90 ft.)	2	1 (265 ft.)	1 (220 ft.)	2	1 (265 ft.)
39	Riggin Avenue & Denton Street	Signalized	1 (25 ft.)	1	--	2 (95 ft.)	1	--	1 (25 ft.)	2	1 (265 ft.)	1 (25 ft.)	2	1 (265 ft.)
66	Shirk Street Access B	TWSC	--	2	1 (265 ft.)	--	1	--	--	--	--	--	--	1[1]
67	Riggin Avenue Access D	TWSC	--	--	--	--	--	1[1]	--	2	--	--	2	1 (265 ft.)
78	Riggin Avenue Access C	TWSC	--	--	--	--	--	1[1]	--	2	--	--	2	1 (265 ft.)
79	Shirk Street Access A	TWSC	--	2	1 (265 ft.)	--	1	--	--	--	--	--	--	1[1]
80	Shirk Street Access F	Signalized	1 (25 ft.)	2	1 (265 ft.)	1 (150 ft.)	1	1 (265 ft.)	--	1	--	--	1	--
81	Denton Street Access E	TWSC	--	1	--	--	1	--	--	1	--	--	1	--

[1] Turning lane is internal to the Costco site therefore no turn lane length recommendations are made.

TABLE 4. SUGGESTED NUMBER OF LANES AND MINIMUM TURN LANE LENGTHS – PHASE III

ID	Intersection	Control	Recommended Number of Lanes (Recommended Minimum Turn Lane Length)											
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
26	Shirk Street & Sedona Avenue	TWSC	--	2	1 (265 ft.)	--	1	--	--	1	--	--	--	1
27	Denton Street & Sedona Avenue	RBT	--	1	--	--	1	--	--	1	--	--	1	--
38	Shirk Street & Riggin Avenue	Signalized	1 (150 ft.)	2	1 (265 ft.)	1 (140 ft.)	1	1 (265 ft.)	1 (120 ft.)	2	1 (265 ft.)	2 (170 ft.)	2	1 (265 ft.)
39	Riggin Avenue & Denton Street	Signalized	1 (25 ft.)	1	--	2 (145 ft.)	1	--	1 (25 ft.)	2	1 (265 ft.)	1 (25 ft.)	2	1 (265 ft.)
66	Shirk Street Access B	TWSC	--	2	1 (265 ft.)	--	1	--	--	--	--	--		1[1]
67	Riggin Avenue Access D	TWSC	--	--	--	--	--	1[1]	--	2	--	--	2	1 (265 ft.)
78	Riggin Avenue Access C	TWSC	--	--	--	--	--	1[1]	--	2	--	--	2	1 (265 ft.)
79	Shirk Street Access A	TWSC	--	2	1 (265 ft.)	--	1	--	--	--	--	--	--	1[1]
80	Shirk Street Access F	Signalized	1 (25 ft.)	2	1 (265 ft.)	1 (150 ft.)	1	1 (265 ft.)	--	1	--	--	1	--
81	Denton Street Access E	TWSC	--	1	--	--	1	--	--	1	--	--	1	--

[1] Turn lane is internal to the Costco site therefore no turn lane length recommendations are made.

Table of Contents

Executive Summary 1
Analysis Scenarios 1
Phase I Operations 2
Intersection Operations 2
Queueing 2
Phase III Operations 2
Intersection Operations 2
Queuing 2
Site Access Geometric Design Review 3
Suggested Improvements 4
Introduction 10
Study Area Description 12
Methodology 12
Intersection Performance Measures 12
Intersection Queues 13
Base Volume Development 13
Analysis Scenarios 13
Study Intersections 14
Vehicle Operations 14
Trip Generation 14
Trip Distribution and Assignment 15
Intersection Operation Results 15
Phase I and Phase I Alternative 15
Phase III and Phase III Alternative Results 17
Intersection Queuing Results 18
Phase I and Phase I Alternative Results 18
Phase III and Phase III Alternative Results 22
Site Access Geometric Design Review 22
Site Plan Review 23
Truck Access 23
Suggested Improvements 27
Intersection Operations Results with Suggested Improvements 28
Phase I Suggested Improvements 28
Phase III Suggested Improvements 29
Queue Analysis Results with Suggested Improvements 30
Phase I Suggested Improvements 30
Phase III Suggested Improvements 30

Conclusion 35
Appendix A 38
Appendix A – Summary of Offsite Recommendations 38
Appendix B - Study intersections, Lane Configuration, and Traffic Control Type 39
Appendix C 40
Appendix C - Visalia Costco Trip Generation Memorandum 40
Appendix D 41
Appendix D – Phase I Vistro 2022 Output 41
Appendix E 42
Appendix E – Phase III Vistro 2022 Output 42
Appendix F 43
Appendix F – Coordination with Shirk-Riggin Industrial Park 43

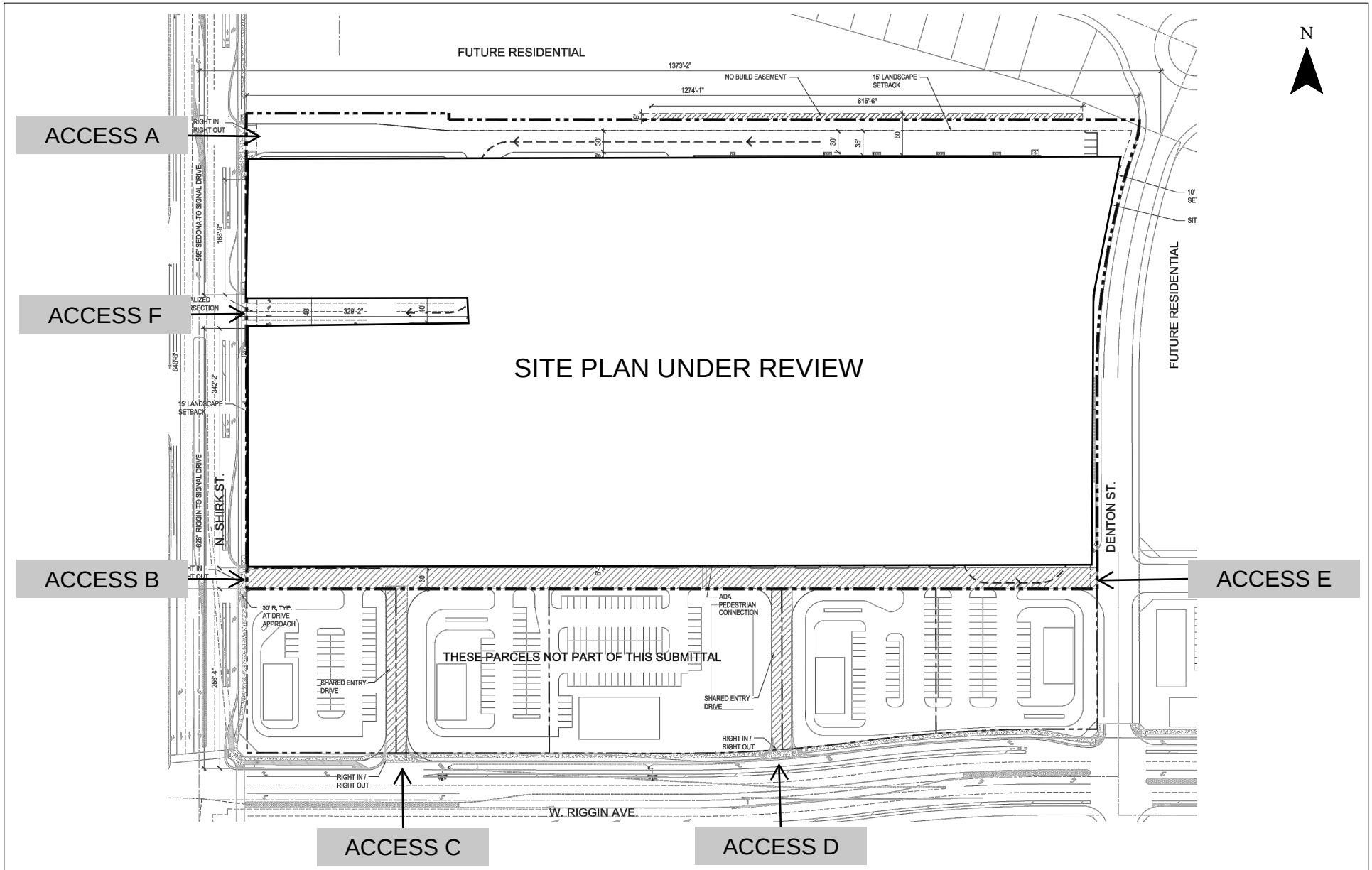
Introduction

Costco Wholesale (Costco) is proposing to construct an approximately 161,000-sf warehouse, 32-fueling position fuel station, and car wash ("Project") located in the northeast quadrant of the Shirk Street/ Riggin Avenue intersection in Visalia, California. The existing site is vacant and part of the Carleton Acres Specific Plan area, which will be a new mixed-use development with commercial, residential, recreational, and educational uses, as outlined in the Carleton Acres Specific Plan.[3] Five commercial parcels totaling approximately 28,000-sf in size are also planned for development by others directly south of the Costco site and would share the access driveways. See Figure 1 for the most recent site plan and Project site accesses.

Costco is exploring an access modification from what was identified in the Carleton Acres Specific Plan and studied through the traffic study for the Specific Plan[4] (Carleton Acres traffic study). The site access modification would include the addition of a signalized full-access driveway on Shirk Street at Access F in Figure 1. This technical memorandum evaluates the effect of this proposed signalized driveway on both Phase 1 and Phase 3 traffic conditions of the Carleton Acres Specific Plan. It also provides a more refined assessment of how Costco members will access the site based on Costco member-specific origin/destination patterns and includes a more conservative estimate of the trip generation for the five commercial outparcels located adjacent to the Project compared to the Carleton Acres traffic study. Recommendations for other improvements in the vicinity of the commercial area are also provided.

[3] Carleton Acres Specific Plan. Ch 2 – Project Description: https://www.visalia.city/civicax/filebank/blobdload.aspx?BlobID=48118

[4] Carleton Acres Specific Plan Traffic Study, March 2023, prepared by Ruettgers & Schuler Civil Engineers



Visalia Costco Site Access
Visalia, CA

Figure
1

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KITTELSON & ASSOCIATES

Study Area Description

The Project will be constructed within the northeast quadrant of the Shirk Street/Riggin Avenue intersection in Visalia. Shirk Street is a north-south, two-lane arterial roadway. Shirk Street has a posted speed limit of 45 miles per hour (mph) south of Riggin Avenue and an unposted speed limit of 55 mph north of Riggin Avenue. Riggin Avenue is an east-west, two-lane arterial with an unposted speed limit of 55 mph. Riggin Avenue connects with State Route 63 to the east and State Route 99 to the west.

Sidewalks are present along the south side of Riggin Avenue between Shirk Street and Roeben Street. There are no bicycle facilities present in the study area. The closest transit stop is the for the 7B route on Akers Street just south of Riggin Avenue, about one mile west of the Project site.

Methodology

This section provides an overview of the methodology for the transportation analysis related to roadway capacity. The following discusses the analysis software and approach as well as the performance standards and evaluation criteria for the analyses.

Intersection Performance Measures

Operations at the study intersections were assessed to determine both level-of-service (LOS) and volume-to-capacity (v/c) ratio. The City of Visalia uses performance standards based on LOS. LOS describes the operating conditions experienced by users of a facility. Level of service (LOS) is a qualitative measure of the effect of several factors, including speed, travel time, traffic interruptions, freedom to maneuver, driving comfort, and convenience. Levels of service are designated "A" through "F," from best to worst, which cover the entire range of traffic operations that might occur. LOS A through E generally represent traffic volumes at less than roadway capacity while LOS F represents over capacity or forced flow conditions. In general, LOS C and D are considered acceptable while LOS E and LOS F are not. These conditions are generally described in Table 5.

TABLE 5. GENERAL LEVEL OF SERVICE DEFINITIONS

LOS	Description
A	**Free Flow or Insignificant Delays:** Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal.
B	**Stable Operation or Minimal Delays:** The ability to maneuver within the traffic stream is only slightly restricted, and control delay at signalized intersections are not significant.
C	**Stable Operation or Acceptable Delays:** The ability to maneuver and change lanes is somewhat restricted, and average travel speeds may be about 5% of the free flow speed.
D	**Approaching Unstable or Tolerable Delays:** Small increases in flow may cause substantial increases in delay and decreases in travel speed.
E	**Unstable Operation or Significant Delays:** Significant delays may occur, and average travel speeds may be 33% or less of the free flow speed.
F	**Forced Flow or Excessive Delays:** Congestion, high delays, and extensive queuing occur at critical signalized intersections with urban street flow at extremely low speeds.

Source: Highway Capacity Manual, Transportation Research Board, Washington D.C., 2020

In conformance with the City's requirements, peak hour operating conditions for the study intersections were evaluated using the *Highway Capacity Manual* 7th Edition (HCM) as implemented by Vistro traffic analysis software. The HCM procedure calculates a weighted average stop delay in seconds per vehicle at signalized and all-way stop-controlled (AWSC) intersections and assigns a level of service designation based on the delay. At two-way stop-controlled (TWSC) intersections, LOS is defined for each minor-street movement and the major-street left turns, as opposed to the intersection as a whole (given that major-street through vehicles are assumed to experience zero delay).

Table 6 presents the relationship of average delay to level of service for signalized intersections, two-way stop-controlled (TWSC) intersections, and all-way stop-controlled (AWSC) intersections. As shown, the thresholds are different for unsignalized intersection (TWSC and AWSC) compared to signals because user

perceptions differ among transportation facility types and "unsignalized intersections are also associated with more uncertainty for users, as delays are less predictable than they are at signals."

TABLE 6. INTERSECTION LEVEL OF SERVICE DEFINITIONS

LOS	Average Delay Per Vehicle (Seconds)	
	Signal	TWSC/AWSC
A	≤10.0	≤10.0
B	>10.0 and ≤20.0	>10.0 and ≤15.0
C	>20.0 and ≤35.0	>15.0 and ≤25.0
D	>35.0 and ≤55.0	>25.0 and ≤35.0
E	>55.0 and ≤80.0	>35.0 and ≤50.0
F	>80.0	>50.0

Source: *Highway Capacity Manual*, 7th Edition
TWSC – two-way stop-controlled; AWSC – all-way stop-controlled

Intersection Queues

Expected intersection queues and how they compare to intersection geometry and available queue storage influences traffic operations. The 95th percentile queues, as reported by the Vistro analysis software, were used to assess queuing at study intersections. Calculated 95th percentile queue lengths represent a length of queue that is statistically not exceeded in 95% of intersection operating cycles.

Base Volume Development

The Carleton Acres Specific Plan used a base set of volumes for the Project and the five commercial outparcels, which were sufficient for a specific plan study. However, the analysis documented in this memorandum used more refined origin/destination patterns for Costco members and included a more conservative estimate of trip generation for the five commercial outparcels.[5] To make use of these more refined distribution numbers and conservative trip generation while still accounting for the rest of the Carleton Acres development, Kittelson removed the volume accessing the site access points in the Carleton Acres traffic study to represent a base volume that includes all of Carleton Acres except the Costco and five commercial outparcels. This provides a base volume for Phase I and Phase III of the Carleton Acres development to which Kittelson can apply the trip generation and distribution developed for this analysis.

Analysis Scenarios

As noted previously, the goal of this analysis is to present intersection operations in the vicinity of the Project. Kittelson analyzed traffic operations for the PM peak hour and Saturday mid-day peak hour conditions at the study intersections listed later in this memo. Project Phase I in this analysis involved use of 2023 background volumes from the Carleton Acres traffic study. Thus, Project Phase I and its Alternative correspond to the 2023+Project (Phase I) scenario in that study. Project Phase III in this analysis involves use of 2046 background volumes and other specific plan development volumes from the Carleton Acres traffic study. Thus, Project Phase III and its Alternative correspond to the 2046+Project (Phases I, II, and III) scenario in that study.

This study includes the following analysis scenarios and assumptions:

1. Project Phase I – 2023 background volumes from Carleton Acres traffic study
    a. Assume two of the five commercial parcels are developed as fast-food restaurants (ITE Land Use Code 934) and three of the five commercial parcels are developed as a shopping center.[6]

[5] Trip generation for the Costco warehouse in this assessment was the same as what was studied for Carleton Acres.
[6] The Carleton Acres traffic study assumed all five commercial parcels are developed as a shopping center (ITE Land Use Code 821).

2. Project Phase I – Alternative
    a. Assume two of the five commercial parcels are developed fast-food restaurants (ITE Land Use Code 934) and three of the five commercial parcels are developed as a shopping center.
    b. Assume an additional full-access driveway with traffic signal (Shirk Street and Access Driveway F).
    c. Assume no southbound left-turn (SBL) at Access Driveway A (i.e., analyze Access Driveway A as right-in, right-out).
3. Project Phase III – 2046 background volumes and other specific plan development volumes from Carleton Acres traffic study
    a. Assume two of the five commercial parcels are developed fast-food restaurants (ITE Land Use Code 934) and three of the five commercial parcels are developed as a shopping center.
4. Project Phase III – Alternative
    a. Assume two of the five commercial parcels are developed fast-food restaurants (ITE Land Use Code 934) and three of the five commercial parcels are developed as a shopping center.
    b. Assume an additional full-access driveway with traffic signal (Shirk Street and Access Driveway F).
    c. Assume no SBL at Access Driveway A (i.e., analyze Access Driveway A as right-in, right-out).

Study Intersections

Kittelson analyzed traffic at the existing and planned site access points (Site Accesses A-F) to evaluate traffic operations. The following intersections were included in the analysis:[7]

26. Shirk Street/Sedona Avenue
27. Denton Street/Sedona Avenue
38. Shirk Street/Riggins Avenue
39. Denton Street/Riggin Avenue
66. Shirk Street/South Access Driveway (Site Access B)
67. Riggin Avenue/East Access Driveway (Site Access D)
78. Riggin Avenue/West Access Driveway (Site Access C)
79. Shirk Street/North Access Driveway (Site Access A)
80. Shirk Street/Central Access Driveway (Site Access F)[8]
81. Denton Street/Site Access E – based on volumes at Intersections 27 and 39

Figures of the study intersections, lane configuration, and traffic control types for Phase I, Phase III, and Alternative scenarios are in Appendix B.

Vehicle Operations

Trip Generation

Kittelson estimated trip generation for the Project for the weekday PM peak hour and for the Saturday midday peak hour. Appendix C includes the Visalia Costco Trip Generation memorandum that provides further detail on the trip generation calculations for the Costco site.

Kittelson modified the trip generation for the five commercial parcels. The Carleton Acres traffic study estimated trips using ITE Land Use Code 821 – Shopping Center. This analysis estimates three parcels using the Shopping Center land use code and two parcels using ITE Land Use Code 934 – Fast-Food Restaurant with Drive-Through Window. This change allows a more conservative estimate of operations at the site

[7] Study intersection numbers 26-79 are consistent with Carleton Acres traffic study intersection numbering.
[8] Intersection 80 was only analyzed under the Phase I and Phase III Alternative scenarios.

access intersections since fast-food is a higher trip generating land use than shopping center. Kittelson assumed the five commercial buildings would be of equal size (i.e., 5,600-sf per building) for trip generation estimation. Table 7 presents the resulting trip generation for the Costco and commercial parcels. The Project is estimated to generate 1,866 total trips in the weekday PM peak hour (895 inbound/971 outbound) and 2,563 total trips during the Saturday midday peak hour (1,272 inbound/1,291 outbound). These trips will access the driveways shown in Figure 1.

TABLE 7. COMMERCIAL PARCEL TRIP GENERATION ESTIMATES

Parcel	Size (KSF)	ITE Land Use Code	Trips per 1,000 Square Feet					
			PM Peak Hour Rate			Sat Midday Rate (Peak Hour)		
			Rate	In	Out	Rate	In	Out
Costco Site	160.5	--	8.39	631	715	11.15	878	912
1 - 3	16.8	821	9.03	72	78	9.26	78	75
4 - 5	11.2	934	33.03	192	178	55.25	316	304
Total				**895**	**971**		**1,272**	**1,291**

Source: ITE *Trip Generation Manual*, 11th Edition; Kittelson & Associates, Inc., 2023

Trip Distribution and Assignment

Trip distribution patterns are based on the access connections to and from the Project and their attraction/destination characteristics. The Costco site generated trips were distributed based on proprietary Costco membership data that allowed for a better representation of where Costco members live. This information along with a review of the roadway system allowed for a more accurate distribution of Costco trips than was assumed for the Carleton Acres traffic study. Trip distribution for the five commercial parcels used the same trip distribution as the Carleton Acres traffic study for consistency. Table 8 presents the trip distribution for the Costco site and commercial parcels.

TABLE 8. TRIP DISTRIBUTION PERCENTAGE

Site	North	East	South	West
Costco Site	1%	60%	30%	9%
Commercial Parcels	5%	45%	40%	10%

Source: Carleton Acres traffic study, 2023; Kittelson & Associates, Inc., 2023

Intersection Operation Results

Phase I and Phase I Alternative

Traffic operations for the study intersections were analyzed using methodologies from the HCM 7th Edition. Table 9 and Table 10 present Phase I and Phase I Alternative traffic operations results for the PM and Saturday midday peak hours, respectively.

In the Phase I PM peak hour, all intersections operate at an LOS ranging from A to D except Riggin Avenue/Denton Avenue, which operates at LOS F. Unsignalized intersections are similar between Phase I and Phase I Alternative scenarios. The proposed Access F driveway (#80) results in LOS D in the Phase I Alternative analysis. Signalizing the following intersections shows improved v/c ratios and vehicle delay in the Phase I Alternative scenario:

- Shirk Street/Riggin Avenue (#38)
- Riggin Avenue/Denton Street (#39)

In the Phase I Saturday midday peak hour, all intersections except Riggin Avenue/Denton Street (#39) operate at an LOS between A and D except Riggin Avenue/Denton Street, which operates at LOS F. Unsignalized intersections are similar between Phase I and Phase I Alternative scenarios. The proposed Access F driveway (#80) results in LOS F in the Phase I Alternative analysis. Signalizing the following intersections shows improved v/c ratios, vehicle delay, and/or LOS in the Phase I Alternative scenario:

- Shirk Street/Riggin Avenue (#38)
- Riggin Avenue/Denton Street (#39)

Detailed intersection operation results can be found in Appendix D for the Phase I analysis.

TABLE 9. PHASE I PM OPERATION ANALYSIS RESULTS

#	Intersection Name	Phase I				Phase I Alternative			
		Traffic Control	V/C	Delay (s/veh)	LOS	Traffic Control	V/C	Delay (s/veh)	LOS
26	Shirk Street/Sedona Avenue	TWSC	0.02	9.0	A	TWSC	0.34	11.9	B
27	Denton Street/Sedona Avenue	RBT	0.00	2.8	A	RBT	0.00	2.8	A
38	Shirk Street/Riggin Avenue	Signal	0.91	53.5	D	Signal	0.84	37.3	D
39	Riggin Avenue/Denton Street	TWSC	**5.13**	**>100**	**F**	Signal	1.05	39.6	D
66	Shirk Street/Site Access B	TWSC	0.02	11.7	B	TWSC	0.01	11.5	B
67	Riggin Avenue/Site Access D	TWSC	0.38	15.9	C	TWSC	0.22	13.6	B
78	Riggin Avenue/Site Access C	TWSC	0.38	16.0	C	TWSC	0.30	14.4	B
79	Shirk Street/Site Access A	TWSC	0.01	9.9	A	TWSC	0.01	9.3	A
80	Shirk Street/Site Access F[1]	--	--	--	--	Signal	0.28	45.2	D
81	Denton Street/Site Access E	TWSC	0.01	17.1	C	TWSC	<0.01	16.0	C

Source: Kittelson & Associates, Inc, 2023
[1] Intersection 80 was only analyzed for Alternative scenarios
Notes: Bolded indicate intersections operating beyond City of Visalia Standards
TWSC – two-way stop-controlled; AWSC – all-way stop-controlled; RBT – roundabout

TABLE 10. PHASE I SAT OPERATION ANALYSIS RESULTS

#	Intersection Name	Phase I				Phase I Alternative			
		Traffic Control	V/C	Delay (s/veh)	LOS	Traffic Control	V/C	Delay (s/veh)	LOS
26	Shirk Street/Sedona Avenue	TWSC	0.02	8.9	A	TWSC	0.34	11.8	B
27	Denton Street/Sedona Avenue	RBT	0.00	2.9	A	RBT	0.00	2.9	A
38	Shirk Street/Riggin Avenue	Signal	0.87	43.2	D	Signal	0.80	34.0	C
39	Riggin Avenue/Denton Street	TWSC	**3.142**	**>100**	**F**	Signal	1.10	27.9	C
66	Shirk Street/Site Access B	TWSC	0.03	12.7	B	TWSC	0.02	12.4	B
67	Riggin Avenue/Site Access D	TWSC	0.42	14.8	B	TWSC	0.25	12.4	B
78	Riggin Avenue/Site Access C	TWSC	0.47	16.6	C	TWSC	0.37	14.5	B
79	Shirk Street/Site Access A	TWSC	0.02	10.5	A	TWSC	0.01	9.6	A
80	Shirk Street/Site Access F[1]	--	--	--	--	Signal	**0.36**	**88.0**	**F**
81	Denton Street/Site Access E	TWSC	0.01	24.6	C	TWSC	0.01	21.8	C

Source: Kittelson & Associates, Inc, 2023
[1] Intersection 80 was only analyzed for Alternative scenarios
Notes: Bolded indicate intersections operating beyond City of Visalia Standards
TWSC – two-way stop-controlled; AWSC – all-way stop-controlled; RBT – roundabout

Phase III and Phase III Alternative Results

Table 11 and Table 12 present Phase III and Phase III Alternative traffic operations results for the PM and Saturday midday peak hours, respectively. In both the PM and Saturday midday peak hours, most intersections operate between LOS A and D. The exception is the Shirk Street/Riggin Avenue intersection (#38), which operates at LOS F in the PM and Saturday midday peak hours.

In the PM peak hour, Shirk Street/Riggin Avenue (#38) operates at LOS F in both the Phase III and Phase III Alternative scenarios. Unsignalized intersection operations are similar between Phase III and Phase III Alternative scenarios. The proposed Access F driveway (#80) results in LOS D in the Phase III Alternative analysis. The following signalized intersections show improved v/c ratios and/or vehicle delay in the Phase III Alternative scenario:

- Shirk Street/Riggin Avenue (#38)
- Riggin Avenue/Denton Street (#39)

In the Saturday midday peak hour, Shirk Street/Riggin Avenue operates at LOS F. The LOS does not change between the Phase III and Phase III Alternative scenarios. Unsignalized intersection operations are similar between the Phase III and Phase III Alternative scenarios. The proposed Access F driveway (#80) results in LOS E in the Phase I Alternative analysis. The following signalized intersections show improved v/c ratios and/or vehicle delay in the Phase III Alternative scenario:

- Shirk Street/Riggin Avenue (#38)
- Riggin Avenue/Denton Street (#39)

Detailed intersection operation results can be found in Appendix E for the Phase III analysis.

TABLE 11. PHASE III PM OPERATION ANALYSIS RESULTS

#	Intersection Name	Phase III				Phase III Alternative			
		Traffic Control	V/C	Delay (s/veh)	LOS	Traffic Control	V/C	Delay (s/veh)	LOS
26	Shirk Street/Sedona Avenue	TWSC	0.03	9.7	A	TWSC	0.61	23.5	C
27	Denton Street/Sedona Avenue	RBT	0.00	2.9	A	RBT	0.00	2.9	A
38	Shirk Street/Riggin Avenue	Signal	**1.10**	**>100**	**F**	Signal	**0.93**	**78.8**	**E**
39	Riggin Avenue/Denton Street	Signal	1.14	50.4	D	Signal	1.11	40.7	D
66	Shirk Street/Site Access B	TWSC	0.02	13.4	B	TWSC	0.01	13.2	B
67	Riggin Avenue/Site Access D	TWSC	0.38	16.1	C	TWSC	0.21	12.9	B
78	Riggin Avenue/Site Access C	TWSC	0.37	15.3	C	TWSC	0.28	13.8	B
79	Shirk Street/Site Access A	TWSC	0.02	11.1	B	TWSC	0.01	10.4	B
80	Shirk Street/Site Access F[1]	--	--	--	--	Signal	0.33	36.9	D
81	Denton Street/Site Access E	TWSC	0.01	17.6	C	TWSC	0.01	16.4	C

Source: Kittelson & Associates, Inc, 2023
[1] Intersection 80 was only analyzed for Alternative scenarios
Notes: Bolded indicate intersections operating beyond City of Visalia Standards
TWSC – two-way stop-controlled; AWSC – all-way stop-controlled; RBT - roundabout

TABLE 12. PHASE III SAT OPERATION ANALYSIS RESULTS

#	Intersection Name	Phase III				Phase III Alternative			
		Traffic Control	V/C	Delay (s/veh)	LOS	Traffic Control	V/C	Delay (s/veh)	LOS
26	Shirk Street/Sedona Avenue	TWSC	0.03	9.5	A	TWSC	0.50	16.9	C
27	Denton Street/Sedona Avenue	RBT	0.00	3.0	A	RBT	0.00	3.0	A
38	Shirk Street/Riggin Avenue	Signal	**1.01**	**81.4**	**F**	Signal	**0.98**	**60.4**	**E**
39	Riggin Avenue/Denton Street	Signal	1.15	50.2	D	Signal	1.01	27.7	C
66	Shirk Street/Site Access B	TWSC	0.03	14.5	B	TWSC	0.02	14.1	B
67	Riggin Avenue/Site Access D	TWSC	0.41	14.4	B	TWSC	0.22	11.3	B
78	Riggin Avenue/Site Access C	TWSC	0.41	14.2	B	TWSC	0.32	12.5	B
79	Shirk Street/Site Access A	TWSC	0.02	11.7	B	TWSC	0.01	10.6	B
80	Shirk Street/Site Access F[1]	--	--	--	--	Signal	**0.44**	**72.4**	**E**
81	Denton Street/Site Access E	TWSC	0.01	25.6	D	TWSC	0.01	22.5	C

Source: Kittelson & Associates, Inc, 2023
[1] Intersection 80 was only analyzed for Alternative scenarios
Notes: Bolded indicate intersections operating beyond City of Visalia Standards
TWSC – two-way stop-controlled; AWSC – all-way stop-controlled; RBT - roundabout

Intersection Queuing Results

An intersection queuing analysis was conducted for the study intersections. Expected intersection queues and how they compare to intersection geometry and available queue storage influence traffic operations. The 95th percentile queues, as reported by Vistro in implementing the HCM methodology, were used to assess queuing at all study intersections. Per City of Visalia TIA Guidelines, arterial roadways (e.g., Riggin Avenue and Shirk Street) require a turn pocket of at least 300 feet.

Phase I and Phase I Alternative Results

Table 13 and Table 14 present the movements at study intersections that are estimated to experience queues of over 300 feet in Phase I in the PM and Saturday midday peak hours, respectively. The following intersections are anticipated to have left- or right-turn queues over 300 feet in the PM peak hour:

- Shirk Street/Riggin Avenue (#38) – westbound through and left-turn movements
- Riggin Avenue/Denton Street (#39) – southbound left-turn movement

The following intersections are anticipated to have left- or right-turn queues over 300 feet in the Saturday peak hour:

- Shirk Street/Riggin Avenue (#38) – westbound through and left-turn movements
- Riggin Avenue/Denton Street (#39) – southbound left-turn movements

The proposed access on Shirk Street (Access F, Figure 1) enables a redistribution of Costco member traffic, thereby reducing queues at these intersections for almost all approaches. In the PM peak hour, queues are anticipated to increase at the Riggin Avenue/Denton Street eastbound and westbound left turn and through lanes. In the Saturday midday peak hour, queues are anticipated to increase at the Shirk Avenue/Riggin Street southbound left turn and through lanes.

The City of Visalia Procedures for Traffic Impact Analysis states that left- and right-turn pockets on arterials be a minimum of 300 feet. In the PM peak hour, the following intersections are anticipated to experience queues over 300 feet or have queues that may spillback to upstream intersections:

- Riggin Avenue/Denton Street (#39) – southbound shared left-through lane (476 feet) would spillback to Site Access E.

In the Saturday midday peak hour, the following intersections are anticipated to experience queues over 300 feet or have queues that may spillback to upstream intersections:

- Shirk Street/Riggin Avenue (#38) – westbound left-turn lane (329 feet) exceeds City Standards for pocket storage lengths.
- Riggin Avenue/Denton Street (#39) – southbound shared left-through lane (518 feet) would spillback to Site Access E.

Queue results for all intersections and turning movements are included in Appendix D.

TABLE 13. PHASE I AND PHASE I ALTERNATIVE 95TH PERCENTILE QUEUE ANALYSIS RESULTS – PM PEAK HOUR

ID	Intersection	Traffic Control	Scenario	95th Percentile Queue (feet/lane)											
				NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
26	Shirk Street/ Sedona Avenue	TWSC	P1	--	0	--	--	1	--	--	--	--	--	--	2
			P1 Alt	--	1	0	--	1	0	--	0	--	--	42	--
27	Denton Street/ Sedona Avenue	RBT	P1	--	1	--	--	2	--	--	1	--	--	0	--
			P1 Alt	--	1	--	--	2	--	--	1	--	--	0	--
38	Shirk Street/ Riggin Avenue	Signal	P1	94	540	159	85	189	--	135	608	--	**431**	196	--
			P1 Alt	80	430	140	123	196	33	112	382	59	273	132	85
39	Riggin Avenue/ Denton Street	TWSC Signal	P1	--	8	--	--	1,496	2	1	0	--	1	0	--
			P1 Alt	--	5	4	--	476	4	16	439	7	11	477	92
66	Shirk Street/ Access B	TWSC	P1	--	0	--	--	0	--	--	--	--	--	--	1
			P1 Alt	--	0	0	--	0	--	--	--	--	--	--	1
67	Riggin Avenue/ Access D	TWSC	P1	--	--	--	--	--	44	--	0	--	--	0	--
			P1 Alt	--	--	--	--	--	21	--	0	--	--	0	0
78	Riggin Avenue/ Access C	TWSC	P1	--	--	--	--	--	44	--	0	--	--	0	--
			P1 Alt	--	--	--	--	--	31	--	0	--	--	0	0
79	Shirk Street/ Access A	TWSC	P1	--	0	--	--	1	--	--	--	--	--	--	1
			P1 Alt	--	0	0	--	0	--	--	--	--	--	--	1
80	Shirk Street/ Access F	-- Signal	P1	--	--	--	--	--	--	--	--	--	--	--	--
			P1 Alt	--	51	33	90	28	0	--	0	--	--	115	--
81	Denton Street/ Access E	TWSC	P1	--	11	--	--	0	--	--	79	--	--	0	--
			P1 Alt	--	10	--	--	0	--	--	65	--	--	0	--

Source: Kittelson & Associates, Inc., 2023
Notes: Bolded values exceed 300 feet, the required turn pocket length on City of Visalia arterials for left- and right-turn movements.
TWSC – two-way stop-controlled; AWSC – all-way stop-controlled; RBT - roundabout

TABLE 14. PHASE I AND PHASE I ALTERNATIVE 95TH PERCENTILE QUEUE ANALYSIS RESULTS – SATURDAY MIDDAY PEAK HOUR

ID	Intersection	Traffic Control	Scenario	95th Percentile Queue (feet/lane)											
				NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
26	Shirk Street/ Sedona Avenue	TWSC	P1	--	0	--	--	1	--	--	--	--	--	--	2
			P1 Alt	--	0	0	--	1	0	--	0	--	--	41	--
27	Denton Street/ Sedona Avenue	RBT	P1	--	1	--	--	2	--	--	1	--	--	<1	--
			P1 Alt	--	1	--	--	2	--	--	1	--	--	<1	--
38	Shirk Street/ Riggin Avenue	Signal	P1	92	546	44	41	166	--	143	196	--	**494**	271	--
			P1 Alt	82	457	46	102	194	30	124	116	48	**329**	202	122
39	Riggin Avenue/ Denton Street	TWSC Signal	P1	--	2	--	--	1,671	2	1	0	--	1	0	--
			P1 Alt	--	3	--	--	518	4	17	111	5	5	298	113
66	Shirk Street/ Access B	TWSC	P1	--	0	--	--	0	--	--	--	--	--	--	2
			P1 Alt	--	0	0	--	0	--	--	--	--	--	--	1
67	Riggin Avenue/ Access D	TWSC	P1	--	--	--	--	--	53	--	0	--	--	0	--
			P1 Alt	--	--	--	--	--	25	--	0	--	--	0	0
78	Riggin Avenue/ Access C	TWSC	P1	--	--	--	--	--	62	--	0	--	--	0	--
			P1 Alt	--	--	--	--	--	43	--	0	--	--	0	0
79	Shirk Street/ Access A	TWSC	P1	--	0	--	--	1	--	--	--	--	--	--	1
			P1 Alt	--	0	0	--	0	--	--	--	--	--	--	1
80	Shirk Street/ Access F	-- Signal	P1	--	--	--	--	--	--	--	--	--	--	--	--
			P1 Alt	--	63	61	145	41	0	--	--	--	--	145	--
81	Denton Street/ Access E	TWSC	P1	--	17	--	--	0	--	--	150	--	--	0	--
			P1 Alt	--	16	--	--	0	--	--	117	--	--	0	--

Source: Kittelson & Associates, Inc., 2023
Notes: Bolded values exceed 300 feet, the required turn pocket length on City of Visalia arterials for left- and right-turn movements.
TWSC – two-way stop-controlled; AWSC – all-way stop-controlled; RBT - roundabout

Phase III and Phase III Alternative Results

Table 15 and Table 16 present the turning movements at Project intersections that are estimated to experience queues of over 300 feet in Phase III in the PM and Saturday midday peak hours, respectively. The following intersections are anticipated to have queues over 300 feet in the PM peak hour:

- Shirk Street/Riggin Avenue (#38) – northbound right and westbound left-through movements
- Riggin Avenue/Denton Street (#39) – southbound left-through movements

The following intersections are anticipated to have queues over 300 feet in the Saturday peak hour:

- Shirk Street/Riggin Avenue (#38) – northbound right and westbound left-through movements
- Riggin Avenue/Denton Street (#39) – southbound left-through movements

The proposed access on Shirk Street (Access F, Figure 1) reduces queues at these intersections for some approaches. In the PM and Saturday peak hours, queues are anticipated to increase at the Shirk Street/Riggin Avenue southbound left and through lanes and the Riggin Avenue/Denton Street eastbound left and through lanes.

The City of Visalia Procedures for Traffic Impact Analysis states that left and right turn pockets on arterials be a minimum of 300 feet. In the PM peak hour, the following intersections are anticipated to experience queues over 300 feet or have queues that may spillback to upstream intersections:

- Shirk Street/Riggin Avenue (#38) – southbound left turn lane (562 feet) and westbound left turn lane (473 feet) exceed City Standards for pocket storage lengths.
- Riggin Avenue/Denton Street (#39) – southbound shared left-through lane (500 feet) would spillback to Site Access E.

In the Saturday midday peak hour, the following intersections are anticipated to experience queues over 300 feet or have queues that may spillback to upstream intersections:

- Shirk Street/Riggin Avenue (#38) – westbound left turn lane (782 feet) exceeds City Standards for pocket storage lengths.
- Riggin Avenue/Denton Street (#39) – southbound through lane (522 feet) would spillback to Site Access E.

As shown in Table 13 through Table 16, 95th percentile queues for certain turn movements are expected to exceed 300 feet at Shirk Street/Riggin Avenue and Riggin Avenue/Denton Street and are expected to increase in Phase III for both the PM and Saturday midday peak hours.

Queue results for all intersections and turning movements are included in Appendix E.

Site Access Geometric Design Review

Left-turn storage length. The City of Visalia Procedures for Traffic Impact Analysis requires all arterial left-turn pockets to have a storage length of at least 300 feet. The southbound left-turn lane at Access F is anticipated to experience queues of up to 145 feet in Phase III. A southbound left-turn pocket of at least 150 feet is recommended for the Access F driveway. The Shirk/Riggin Industrial Development has proposed a 300' northbound left-turn pocket at the Shirk Street/Sedona Avenue intersection. Spacing between Access F and the intersection at Sedona Avenue is approximately 600' could accommodate the left-turn pockets of 150' and 300'.

Deceleration lanes. The City of Visalia Procedures for Traffic Impact Analysis requires all roadways with a speed limit of 35 miles per hour or greater to be analyzed for deceleration lanes. The American Association of State Highway and Transportation Officials (AASHTO) Policy on Geometric Design of Highways and Streets Manual provides guidance on recommended deceleration lane lengths based on the posted speed of the roadway (see Table 9-20). Shirk Street and Riggin Avenue are arterial roadways with posted speed limit of 55 mph today. However, with development of the Carleton Acres Specific Plan area, the speed limit is anticipated to decrease to 40 mph. Based on AASHTO guidance and queuing results in Table 13 through Table 16, the suggested deceleration lane length is 265 feet for all access driveways and intersections on Shirk Street and Riggin Avenue.

Due to constraints associated with spacing of site accesses relative to one another and/or to an adjacent intersection, it may not be feasible to construct deceleration lanes of 265 feet on Shirk Street at Accesses A, B, or F. Therefore, at these site accesses, some vehicle deceleration would occur in the through lane before vehicles shift into the deceleration lane to further decelerate and make a right-turn into the site. Given the anticipated speed limit in the area and the suburban nature of land development anticipated with the development of the Carleton Acres Specific Plan and the Shirk-Riggin Industrial Park on the west side of Shirk Street, such deceleration in the through lane is not expected to impede traffic flow along Shirk Street.

Signal spacing. As the Carleton Acres Specific Plan area develops, Shirk Street will be improved to a four-lane facility with a raised median. The City of Visalia Engineering Design Standard P-12 states, "Full median openings are scheduled for one-half mile intervals. Any proposed median openings at less than one-half mile must be approved by the City engineer. Signalized intersections are scheduled for arterial/arterial, arterial/collector, and collector/collector intersections which typically occur at one-half mile intervals. All traffic signal locations must be approved by the City engineer based on traffic engineering findings."[9]

The Project proposes Access F: a signalized, full-access intersection on Shirk Street approximately 650 feet north of the signalized intersection at Riggin Avenue and approximately 600 feet south of the planned ¾ intersection at the future Sedona Avenue to the north of the Project. The intersection would also provide full access to the Shirk/Riggin Industrial Park proposed for development on the west side of Shirk Street. Per discussions Kittelson had with City traffic engineering staff in March 2023, the 650-foot spacing from the signal at Riggin Avenue would allow for progressive signal timing, thereby enabling a consistently managed flow of traffic between signals that are spaced closer than one-half mile.

Access spacing. City Engineering Design Standard C-32 states the minimum distance of a driveway from an intersection on an arterial is 200 feet. As shown in Figure 1, Access F is a full-access intersection approximately 650 feet north of the Shirk Street/Riggin Avenue intersection and approximately 600 feet south of the Shirk Street/Sedona Avenue intersection. The spacing between the proposed Access F driveway and the adjacent intersections complies with City Engineering Design Standard C-32. Right-in/right-out Access B is approximately 380' south of Access F, and right-in/right-out Access A is approximately 240' north of Access F. The distance between the Access B and Access F right-in/right-out driveways are sufficient to accommodate decelerations lanes of 265', as recommended in the AASHTO Green Book; however, the distance between Access F and Access A driveways is not sufficient for the recommended deceleration lane length. While the spacing of Accesses A and B relative to Access F do not meet City Engineering Design Standard C-32 for 500' spacing between driveways, the provision of deceleration lanes and restriction to right-in/right-out only access reduces the potential conflicting movements that could occur between vehicles entering and exiting the Project development and through vehicles on Shirk Street. Therefore, conditions would be acceptable even while not meeting the standard driveway spacing.

Site Plan Review

Truck Access

Delivery trucks regularly serve the Costco site and are assumed to find the access points that are the most direct path from the nearest truck route. Figure 2 presents the routes and site accesses that trucks would take to serve the Costco warehouse and fuel station. All trucks are expected to use Shirk Avenue and Access Driveways A or F to enter the site. The driveway accesses on Riggin Avenue or Denton Street are expected to be used as egress routes once warehouse and fuel station trucks have completed their deliveries. Tire center delivery trucks are expected to use Access F to exit the site. Anticipated westbound queues on Riggin Avenue at Shirk Street may interfere with fuel trucks egress at Access C during peak hours.

[9] City of Visalia Engineering Design and Improvement Standards, 2016. https://www.visalia.city/civicax/filebank/blobdload.aspx?BlobID=34583

TABLE 15. PHASE III AND PHASE III ALTERNATIVE 95TH PERCENTILE QUEUE ANALYSIS RESULTS – PM PEAK HOUR

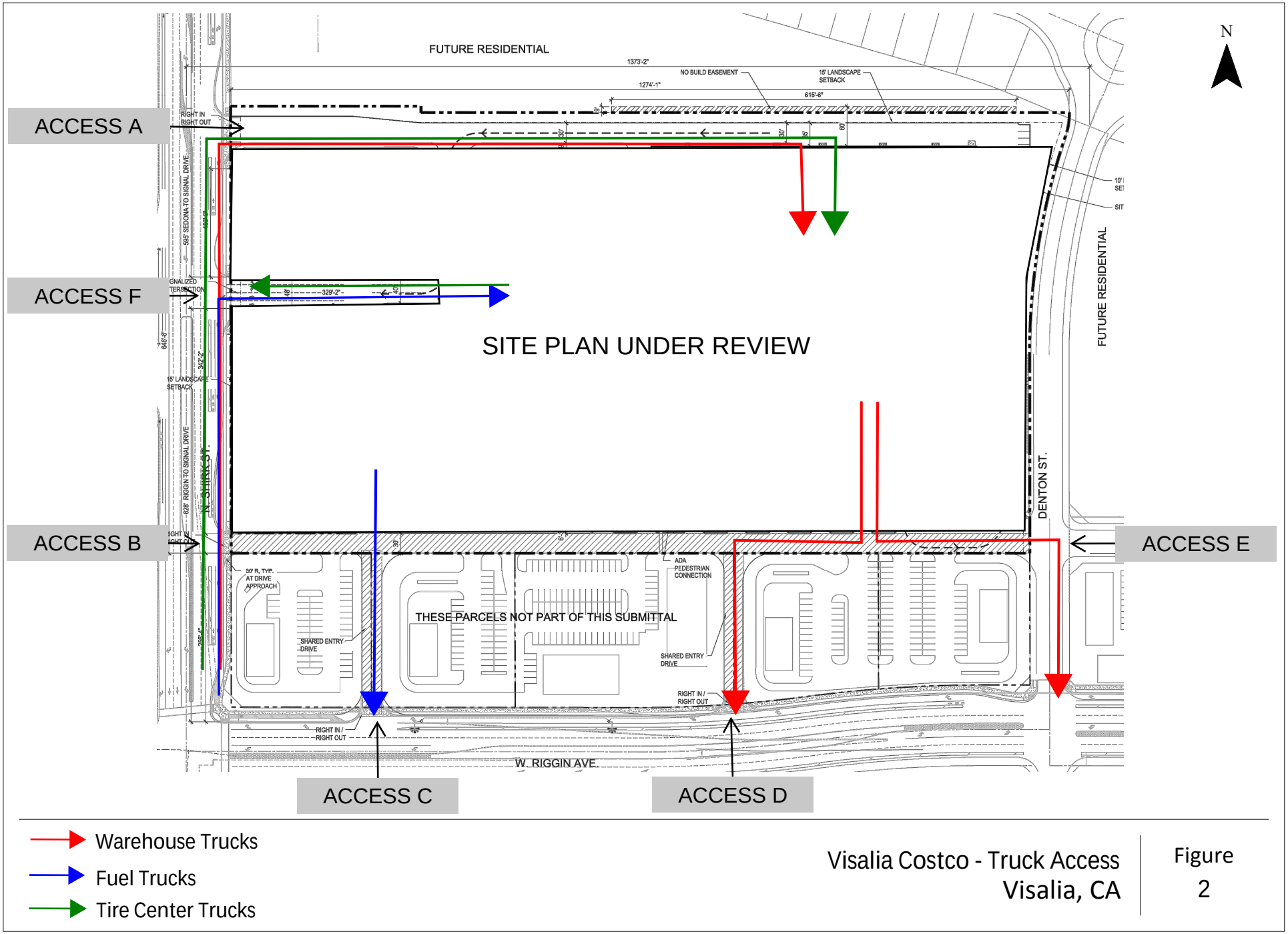
ID	Intersection	Traffic Control	Scenario	95th Percentile Queue (feet/lane)													
				NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBT	EBR	WBL	WBT	WBT	WBR
26	Shirk Street/ Sedona Avenue	TWSC	P3	--	1	--	--	1	--	--	--	--	--	--	--	--	2
			P3 Alt	--	0	0	--	1	1	--	11	--	--	--	--	108	--
27	Denton Street/ Sedona Avenue	RBT	P3	--	2	--	--	3	--	--	1	--	--	--	1	--	--
			P3 Alt	--	2	--	--	3	--	--	1	--	--	--	1	--	--
38	Shirk Street/ Riggin Avenue	Signal	P3	199	989	**312**	124	227	--	165	1,190	1,160	--	**654**	284	272	--
			P3 Alt	201	577	276	**562**	268	60	166	739	739	195	**473**	230	230	175
39	Riggin Avenue/ Denton Street	Signal	P3	--	7	--	--	661	3	9	611	611	--	14	505	503	--
			P3 Alt	--	7	--	--	500	4	19	647	647	6	14	346	346	90
66	Shirk Street/ Access B	TWSC	P3	--	0	--	--	0	--	--	--	--	--	--	--	--	2
			P3 Alt	--	0	0	--	0	--	--	--	--	--	--	--	--	1
67	Riggin Avenue/ Access D	TWSC	P3	--	--	--	--	--	44	--	0	0	--	--	--	0	--
			P3 Alt	--	--	--	--	--	19	--	0	0	--	--	--	0	0
78	Riggin Avenue/ Access C	TWSC	P3	--	--	--	--	--	42	--	0	0	--	--	--	0	--
			P3 Alt	--	--	--	--	--	29	--	0	0	--	--	--	0	0
79	Shirk Street/ Access A	TWSC	P3	--	0	--	--	1	--	--	--	--	--	--	--	--	1
			P3 Alt	--	0	0	--	0	--	--	--	--	--	--	--	--	1
80	Shirk Street/ Access F	-- Signal	P3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			P3 Alt	--	89	33	90	40	0	--	--	0	--	--	--	115	--
81	Denton Street/ Access E	TWSC	P3	--	11	--	--	0	--	--	81	--	--	--	0	--	--
			P3 Alt	--	10	--	--	0	--	--	67	--	--	--	0	--	--

Source: Kittelson & Associates, Inc., 2023
Notes: Bolded values exceed 300 feet, the required turn pocket length on City of Visalia arterials for left- and right-turn movements.
TWSC – two-way stop-controlled; AWSC – all-way stop-controlled; RBT - roundabout

TABLE 16. PHASE III AND PHASE III ALTERNATIVE 95TH PERCENTILE QUEUE ANALYSIS RESULTS – SATURDAY PEAK

ID	Intersection	Traffic Control	Scenario	95th Percentile Queue (feet/lane)													
				NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBT	EBR	WBL	WBT	WBT	WBR
26	Shirk Street/ Sedona Avenue	TWSC	P3	--	0	--	--	1	--	--	--	--	--	--	--	--	2
			P3 Alt	--	0	0	--	1	1	--	--	0	--	--	76	--	--
27	Denton Street/ Sedona Avenue	RBT	P3	--	2	--	--	3	--	--	1	--	--	--	1	--	--
			P3 Alt	--	2	--	--	3	--	--	2	--	--	--	1	--	--
38	Shirk Street/ Riggin Avenue	Signal	P3	211	**609**	78	124	329	--	191	271	254	--	**1,503**	466	473	--
			P3 Alt	195	**929**	97	159	395	54	170	179	179	157	**782**	323	323	209
39	Riggin Avenue/ Denton Street	Signal	P3	--	3	--	--	**948**	4	11	130	129	--	10	314	292	--
			P3 Alt	--	3	--	--	**522**	4	21	147	147	5	9	210	210	140
66	Shirk Street/ Access B	TWSC	P3	--	0	--	--	0	--	--	--	--	--	--	--	--	3
			P3 Alt	--	0	0	--	0	--	--	--	--	--	--	--	--	2
67	Riggin Avenue/ Access D	TWSC	P3	--	--	--	--	--	50	--	0	0	--	--	--	0	0
			P3 Alt	--	--	--	--	--	21	--	0	0	--	--	--	0	0
78	Riggin Avenue/ Access C	TWSC	P3	--	--	--	--	--	50	--	0	0	--	--	--	0	0
			P3 Alt	--	--	--	--	--	34	--	0	0	--	--	--	0	0
79	Shirk Street/ Access A	TWSC	P3	--	0	--	--	1	--	--	--	--	--	--	--	--	2
			P3 Alt	--	0	0	--	0	--	--	--	--	--	--	--	--	1
80	Shirk Street/ Access F	--	P3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Signal	P3 Alt	--	105	61	145	64	0	--	0	--	--	--	--	145	--
81	Denton Street/ Access E	TWSC	P3	--	17	--	--	0	--	--	157	--	--	--	0	--	--
			P3 Alt	--	15	--	--	0	--	--	122	--	--	--	0	--	--

Source: Kittelson & Associates, Inc., 2023
Notes: Bolded values exceed 300 feet, the required turn pocket length on City of Visalia arterials for left- and right-turn movements.
TWSC – two-way stop-controlled; AWSC – all-way stop-controlled; RBT - roundabout



Visalia Costco - Truck Access
Visalia, CA

Figure
2

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KITTELSON & ASSOCIATES

Suggested Improvements

Based on the intersection operations and queueing analysis findings, Kittelson developed potential site access and roadway improvements that would support and facilitate ingress and egress for the commercial development. These suggested improvements are presented in Table 17 and Table 18 and are compared to the improvements suggested in the Carleton Acres traffic study.

TABLE 17. SUGGESTED INTERSECTION IMPROVEMENTS

ID	Intersection	Phase I[1] Recommendations		Phase III Recommendation	
		Carleton Acres TIA	Costco TIA	Carleton Acres TIA[3]	Costco TIA
38	Shirk Street-Riggin Avenue	Construct traffic signal	Confirmed: construct traffic signal	Construct EBT	Add EBR Add WBL
39	Denton Street-Riggin Avenue	None	Construct traffic signal Construct second SBL lane	Construct traffic signal	No further recommendation beyond Phase I recommendations
80	Shirk Street-Central Access Driveway (Site Access F)[2]	Not analyzed	Construct traffic signal	Not analyzed	No further recommendations beyond Phase I

[1] Phase I recommendations should be in place before Costco's opening day.
[2] Intersection 80 was only analyzed in the Visalia Costco TIA
[3] Includes recommendations that were made as part of the Phase II analysis in the Carleton Acres traffic study
SBL – southbound left; EBT – eastbound through; EBR – eastbound right; WBL – westbound left

TABLE 18. SUGGESTED ROADWAY IMPROVEMENTS

Roadway	Phase I[1] Recommendations		Phase III Recommendation	
	Carleton Acres TIA	Costco TIA	Carleton Acres TIA	Costco TIA
Shirk Street	None	Widen to two-lanes NB, Riggin Avenue to Sedona Avenue	None	No further recommendations beyond Phase I
Riggin Avenue	Widen to four-lane cross section, Shirk Street to Akers Street	Confirm: Widen to four-lane cross section, Shirk Street to Akers Street	None	No further recommendations beyond Phase I

[1] Phase I recommendations should be in place before Costco's opening day.

Intersection Operations Results with Suggested Improvements

Phase I Suggested Improvements

Table 19 and Table 20 show the operations analysis results with the suggested improvements for the Phase I PM and Saturday midday peak hours, respectively. If these improvements were to be implemented, all intersections would operate with an LOS between A and C.

TABLE 19. WITH SUGGESTED PHASE I IMPROVEMENTS – OPERATION ANALYSIS RESULTS (PM PEAK HOUR)

ID	Intersection Name	Traffic Control	Phase I Alternative			Phase I Suggested Improvements		
			V/C	Delay (s/veh)	LOS	V/C	Delay (s/veh)	LOS
26	Shirk Street/Sedona Avenue	TWSC	0.34	11.9	B	0.02	8.5	A
27	Denton Street/Sedona Avenue	RBT	0.00	2.8	A	0.00	2.8	A
38	Shirk Street/Riggin Avenue	Signal	0.84	37.3	D	0.63	20.2	C
39	Riggin Avenue/Denton Street	Signal	1.05	39.6	D	0.52	12.7	B
66	Shirk Street/Site Access B	TWSC	0.01	11.5	B	0.01	0.0	A
67	Riggin Avenue/Site Access D	TWSC	0.22	13.6	B	0.16	10.8	B
78	Riggin Avenue/Site Access C	TWSC	0.30	14.4	B	0.22	11.2	B
79	Shirk Street/Site Access A	TWSC	0.01	9.3	A	0.01	8.8	A
80	Shirk Street/Site Access F	Signal	0.28	45.2	D	0.25	8.6	A
81	Denton Street/Site Access E	TWSC	<0.01	16.0	C	<0.01	16.0	C

Source: Kittelson & Associates, Inc., 2023
TWSC – two-way stop-controlled; AWSC – all-way stop-controlled; RBT – roundabout

TABLE 20. WITH SUGGESTED PHASE I IMPROVEMENTS – OPERATION ANALYSIS RESULTS (SATURDAY MIDDAY PEAK HOUR)

ID	Intersection Name	Traffic Control	Phase I Alternative			Phase I Suggested Improvements		
			V/C	Delay (s/veh)	LOS	V/C	Delay (s/veh)	LOS
26	Shirk Street/Sedona Avenue	TWSC	0.34	11.8	B	0.02	8.5	A
27	Denton Street/Sedona Avenue	RBT	0.00	2.9	A	0.00	2.9	A
38	Shirk Street/Riggin Avenue	Signal	0.80	34.0	C	0.62	22.8	C
39	Riggin Avenue/Denton Street	Signal	1.10	27.9	D	0.54	13.4	B
66	Shirk Street/Site Access B	TWSC	0.02	12.4	B	0.01	10.3	B
67	Riggin Avenue/Site Access D	TWSC	0.25	12.4	B	0.20	10.6	B
78	Riggin Avenue/Site Access C	TWSC	0.37	14.5	B	0.29	11.6	B
79	Shirk Street/Site Access A	TWSC	0.01	9.6	A	0.01	9.0	A
80	Shirk Street/Site Access F	Signal	**0.36**	**88.0**	**F**	0.39	9.8	A
81	Denton Street/Site Access E	TWSC	0.01	21.8	C	0.01	21.8	C

Source: Kittelson & Associates, Inc., 2023
TWSC – two-way stop-controlled; AWSC – all-way stop-controlled; RBT - roundabout

Phase III Suggested Improvements

Table 21 and Table 22 present the operations analysis results with the suggested improvements for the Phase III PM and Saturday midday peak hours, respectively. If these improvements were to be implemented, all intersections would operate with an LOS between A and C.

TABLE 21. WITH SUGGESTED PHASE III IMPROVEMENTS – OPERATION ANALYSIS RESULTS (PM PEAK HOUR)

ID	Intersection Name	Traffic Control	Phase III Alternative			Phase III Suggested Improvements		
			V/C	Delay (s/veh)	LOS	V/C	Delay (s/veh)	LOS
26	Shirk Street/Sedona Avenue	TWSC	0.61	23.5	C	0.43	14.4	B
27	Denton Street/Sedona Avenue	RBT	0.00	2.9	A	0.00	2.9	A
38	Shirk Street/Riggin Avenue	Signal	**0.93**	**78.8**	**F**	0.80	30.1	C
39	Riggin Avenue/Denton Street	Signal	1.11	40.7	D	0.75	15.5	B
66	Shirk Street/Site Access B	TWSC	0.01	13.2	B	0.01	10.6	B
67	Riggin Avenue/Site Access D	TWSC	0.21	12.9	B	0.21	12.9	B
78	Riggin Avenue/Site Access C	TWSC	0.28	13.8	B	0.28	13.8	B
79	Shirk Street/Site Access A	TWSC	0.01	10.4	B	0.01	9.4	A
80	Shirk Street/Site Access F	Signal	0.33	36.9	D	0.29	7.7	A
81	Denton Street/Site Access E	TWSC	0.01	16.4	C	0.01	16.4	C

Source: Kittelson & Associates, Inc., 2023
Notes: Bolded indicate intersections operating beyond City of Visalia Standards
TWSC – two-way stop-controlled; AWSC – all-way stop-controlled; RBT - roundabout

TABLE 22. WITH SUGGESTED PHASE III IMPROVEMENTS – OPERATION ANALYSIS RESULTS (SATURDAY MIDDAY PEAK HOUR)

ID	Intersection Name	Traffic Control	Phase III Alternative			Phase III Suggested Improvements		
			V/C	Delay (s/veh)	LOS	V/C	Delay (s/veh)	LOS
26	Shirk Street/Sedona Avenue	TWSC	0.50	16.9	C	0.43	14.1	B
27	Denton Street/Sedona Avenue	RBT	0.00	3.0	A	0.00	3.0	A
38	Shirk Street/Riggin Avenue	Signal	**0.98**	**60.4**	**E**	0.73	24.4	C
39	Riggin Avenue/Denton Street	Signal	1.01	27.7	C	0.60	14.0	B
66	Shirk Street/Site Access B	TWSC	0.02	14.1	B	0.01	10.9	B
67	Riggin Avenue/Site Access D	TWSC	0.22	11.3	B	0.22	11.3	B
78	Riggin Avenue/Site Access C	TWSC	0.32	12.5	B	0.32	12.5	B
79	Shirk Street/Site Access A	TWSC	0.01	10.6	B	0.01	9.5	A
80	Shirk Street/Site Access F	Signal	**0.44**	**72.4**	**E**	0.39	8.8	A
81	Denton Street/Site Access E	TWSC	0.01	22.5	C	0.01	22.5	C

Source: Kittelson & Associates, Inc., 2023
Notes: Bolded indicate intersections operating beyond City of Visalia Standards
TWSC – two-way stop-controlled; AWSC – all-way stop-controlled; RBT - roundabout

Queue Analysis Results with Suggested Improvements

Phase I Suggested Improvements

Table 23 and Table 24 present the queue analysis results for the Phase I PM and Saturday midday peak hours, respectively. If the suggested improvements were to be implemented, it is anticipated that queuing at the intersections will decrease or have no change. Signalized intersections are estimated to have left- or right-turn queues below 300 feet.

Phase III Suggested Improvements

Table 25 and Table 26 present the queue analysis results for the Phase III PM and Saturday midday peak hours, respectively. If the suggested improvements were to be implemented, it is anticipated that queuing at the intersections will decrease or have no change. With these recommendations, queueing is anticipated to decrease or have no change in queues. Signalized intersections are estimated to have left- or right-turn queues below 300 feet.

TABLE 23. PHASE I ALTERNATIVE AND PHASE I ALTERNATIVE WITH SUGGESTED IMPROVEMENTS – 95TH PERCENTILE QUEUE ANALYSIS RESULTS (PM PEAK HOUR)

ID	Intersection	Traffic Control	Scen.	95th Percentile Queue (feet/lane)															
				NBL	NBT	NBT	NBR	SBL	SBL	SBT	SBT	SBR	EBL	EBT	EBT	EBR	WBL	WBT	WBT	WBR
26	Shirk Street/ Sedona Avenue	TWSC	P1 Alt	--	1	--	0	--	--	1	--	0	--	--	--	--	--	0	--	42
			P1 Imp	--	0	0	0	--	--	1	<1	--	--	--	--	--	--	--	--	1
27	Denton Street/ Sedona Avenue	RBT	P1 Alt	--	1	--	--	--	--	2	--	--	--	1	--	--	--	0	--	--
			P1 Imp	--	1		--	--	--	2		--	--	1	--	--	--	<1	--	--
38	Shirk Street/ Riggin Avenue	Signal	P1 Alt	80	430	--	140	123	--	196	--	33	112	382	--	59	**431**	196	--	--
			P1 Imp	40	97	97	82	64	--	49	49	19	54	88	88	31	139	29	29	35
39	Riggin Avenue/ Denton Street	Signal	P1 Alt	--	5	--	4	--	--	**476**	--	4	16	439	--	7	11	477	--	92
			P1 Imp	6	4	--	--	69	69	2	--	--	9	84	84	3	8	86	86	46
66	Shirk Street/ Access B	TWSC	P1 Alt	--	0	--	0	--	--	0	--	--	--	--	--	--	--	--	--	1
			P1 Imp	--	0	0	0	--	--	0	--	--	--	--	--	--	--	--	--	0
67	Riggin Avenue/ Access D	TWSC	P1 Alt	--	--	--	--	--	--	--	--	21	--	0	--	--	--	--	0	0
			P1 Imp	--	--	--	--	--	--	--	--	14	--	0	0	--	--	0	0	0
78	Riggin Avenue/ Access C	TWSC	P1 Alt	--	--	--	--	--	--	--	--	31	--	0	0	--	--	--	0	0
			P1 Imp	--	--	--	--	--	--	--	--	21	--	0	0	--	--	0	0	0
79	Shirk Street/ Access A	TWSC	P1 Alt	--	0	--	0	--	--	0	--	--	--	--	--	--	--	--	--	1
			P1 Imp	--	0	0	0	--	--	0	0	--	--	--	--	--	--	--	--	<1
80	Shirk Street/ Access F	Signal	P1 Alt	--	51	--	33	90	--	28	--	0	--	--	0	--	--	115	--	--
			P1 Imp	--	10	17	33	0	--	19	19	0	--	--	0	--	--	115	--	--
81	Denton Street/ Access E	TWSC	P1 Alt	--	10	--	--	--	--	0	--	--	--	65	--	--	--	0	--	--
			P1 Imp	--	10	--	--	--	--	0	--	--	--	65	--	--	--	0	--	--

Source: Kittelson & Associates, Inc., 2023
Notes: Bolded values exceed 300 feet, the required turn pocket length on City of Visalia arterials for left- and right-turn movements.
TWSC – two-way stop-controlled; AWSC – all-way stop-controlled; RBT - roundabout

TABLE 24. PHASE I ALTERNATIVE AND PHASE I ALTERNATIVE WITH SUGGESTED IMPROVEMENTS – 95TH PERCENTILE QUEUE ANALYSIS RESULTS (SATURDAY MIDDAY PEAK HOUR)

ID	Intersection	Traffic Control	Scen.	95th Percentile Queue (feet/lane)																
				NBL	NBT	NBT	NBR	SBL	SBL	SBT	SBT	SBR	EBL	EBT	EBT	EBR	WBL	WBT	WBT	WBR
26	Shirk Street/ Sedona Avenue	TWSC	P1 Alt	--	0	--	0	--	--	1	--	0	--	0	--	--	--	41	--	--
			P1 Imp	--	0	0	0	--	--	1	<1	--	--	--	--	--	--	--	--	2
27	Denton Street/ Sedona Avenue	RBT	P1 Alt	--	1	--	--	--	--	2	--	--	--	1	--	--	--	<1	--	--
			P1 Imp	--	1	--	--	--	--	2		--	--	1	--	--	--	<1	--	--
38	Shirk Street/ Riggin Avenue	Signal	P1 Alt	82	457	--	46	102	--	194	--	30	124	116	--	48	**329**	202	--	122
			P1 Imp	60	157	157	39	72	--	73	73	25	86	33	33	30	220	54	54	72
39	Riggin Avenue/ Denton Street	Signal	P1 Alt	--	3	--	--	--	--	**518**	--	4	17	111	--	5	5	298	--	113
			P1 Imp	5	2	--	--	94	94	3	--	--	13	33	33	3	7	86	86	81
66	Shirk Street/ Access B	TWSC	P1 Alt	--	0	--	0	--	--	0	--	--	--	--	--	--	--	--	--	1
			P1 Imp	--	0	0	0	--	--	0	0	--	--	--	--	--	--	--	--	1
67	Riggin Avenue/ Access D	TWSC	P1 Alt	--	--	--	--	--	--	--	--	25	--	0	--	--	--	--	0	0
			P1 Imp	--	--	--	--	--	--	--	--	19	--	0	0	--	--	--	0	0
78	Riggin Avenue/ Access C	TWSC	P1 Alt	--	--	--	--	--	--	--	--	43	--	0	--	--	--	--	0	0
			P1 Imp	--	--	--	--	--	--	--	--	30	--	0	0	--	--	--	0	0
79	Shirk Street/ Access A	TWSC	P1 Alt	--	0	--	--	--	--	0	--	--	--	--	--	--	--	--	--	1
			P1 Imp	--	0	0	--	--	--	0	0	--	--	--	--	--	--	--	--	1
80	Shirk Street/ Access F	Signal	P1 Alt	--	63	--	61	145	--	41	--	0	--	0	--	--	--	145	--	--
			P1 Imp	--	18	28	61	20	--	26	26	0	--	--	--	--	--	145	--	--
81	Denton Street/ Access E	TWSC	P1 Alt	--	16	--	--	--	--	0	--	--	--	117	--	--	--	0	--	--
			P1 Imp	--	16	--	--	--	--	0	--	--	--	117	--	--	--	0	--	--

Source: Kittelson & Associates, Inc., 2023
Notes: Bolded values exceed 300 feet, the required turn pocket length on City of Visalia arterials for left- and right-turn movements.
TWSC – two-way stop-controlled; AWSC – all-way stop-controlled; RBT - roundabout

TABLE 25. PHASE III ALTERNATIVE AND PHASE III ALTERNATIVE WITH SUGGESTED IMPROVEMENTS – 95TH PERCENTILE QUEUE ANALYSIS RESULTS (PM PEAK HOUR)

ID	Intx.	Traffic Control	Scen.	95th Percentile Queue (feet/lane)																
				NBL	NBT	NBT	NBR	SBL	SBL	SBT	SBT	SBR	EBL	EBT	EBT	EBR	WBL	WBL	WBT	WBT	WBR
26	Shirk Street/ Sedona Avenue	TWSC	PIII Alt	--	0	--	0	--	--	1	--	1	--	11	--	--	--	--	108	--	--
			PIII Imp	--	0	0	0	--	--	1	<1	--	--	--	--	--	--	--	--	--	59
27	Denton Street/ Sedona Avenue	RBT	PIII Alt	--	2	--	--	--	--	3	--	--	--	1	--	--	--	--	1	--	--
			PIII Imp	--	2	--	--	--	--	3	--	--	--	1	--	--	--	--	1	--	--
38	Shirk Street/ Riggin Avenue	Signal	PIII Alt	201	577	--	276	**562**	--	268	--	60	166	739	739	195	**473**	--	230	230	175
			PIII Imp	145	221	221	257	138	--	97	97	44	117	356	356	120	170	170	174	174	126
39	Riggin Avenue/ Denton Street	Signal	PIII Alt	--	7	--	--	--	--	**500**	--	4	19	647	647	6	14	--	346	346	90
			PIII Imp	9	6	--	--	146	146	7	--	--	15	312	312	4	12	--	226	226	54
66	Shirk Street/ Access B	TWSC	PIII Alt	--	0	--	0	--	--	0	--	--	--	--	--	--	--	--	--	--	1
			PIII Imp	--	0	0	0	--	--	0	--	--	--	--	--	--	--	--	--	--	1
67	Riggin Avenue/ Access D	TWSC	PIII Alt	--	--	--	--	--	--	--	--	19	--	0	0	--	--	--	--	0	0
			PIII Imp	--	--	--	--	--	--	--	--	19	--	0	0	--	--	--	--	0	0
78	Riggin Avenue/ Access C	TWSC	PIII Alt	--	--	--	--	--	--	--	--	29	--	0	0	--	--	--	--	0	0
			PIII Imp	--	--	--	--	--	--	--	--	29	--	0	0	--	--	--	--	0	0
79	Shirk Street/ Access A	TWSC	PIII Alt	--	0	--	0	--	--	0	--	--	--	--	--	--	--	--	--	--	1
			PIII Imp	--	0	--	--	--	--	0	--	--	--	--	--	--	--	--	--	--	1
80	Shirk Street/ Access F	Signal	PIII Alt	--	89	--	33	--	90	40	--	0	--	0	--	--	--	--	--	115	--
			PIII Imp	--	22	37	33	12	--	27	27	0	--	0	--	--	--	--	--	115	--
81	Denton Street/ Access E	TWSC	PIII Alt	--	10	--	--	--	--	0	--	--	--	67	--	--	--	--	0	--	--
			PIII Imp	--	10	--	--	--	--	0	--	--	--	67	--	--	--	--	0	--	--

Source: Kittelson & Associates, Inc., 2023
Notes: Bolded values exceed 300 feet, the required turn pocket length on City of Visalia arterials for left- and right-turn movements.
TWSC – two-way stop-controlled; AWSC – all-way stop-controlled; RBT - roundabout

TABLE 26. PHASE III ALTERNATIVE AND PHASE III ALTERNATIVE WITH SUGGESTED IMPROVEMENTS – 95TH PERCENTILE QUEUE ANALYSIS RESULTS (SATURDAY MIDDAY PEAK HOUR)

ID	Intx.	Traffic Control	Scen.	95th Percentile Queue (feet/lane)																
				NBL	NBT	NBT	NBR	SBL	SBL	SBT	SBT	SBR	EBL	EBT	EBT	EBR	WBL	WBL	WBT	WBT	WBR
26	Shirk Street/ Sedona Avenue	TWSC	PIII Alt	--	0	--	0	--	--	1	--	1	--	0	--	--	--	--	76	--	--
			PIII Imp	--	0	0	0	--	--	1	<1	--	--	--	--	--	--	--	--	--	60
27	Denton Street/ Sedona Avenue	RBT	PIII Alt	--	2	--	--	--	--	3	--	--	--	2	--	--	--	--	1	--	--
			PIII Imp	--	2	--	--	--	--	3	--	--	--	2	--	--	--	--	1	--	--
38	Shirk Street/ Riggin Avenue	Signal	PIII Alt	195	929	--	97	159	--	395	--	54	170	179	179	157	**782**	--	323	323	209
			PIII Imp	119	188	188	64	96	--	118	118	35	102	92	92	80	166	166	214	214	128
39	Riggin Avenue/ Denton Street	Signal	PIII Alt	--	3	--	--	--	--	**522**	--	4	21	147	147	5	9	--	210	210	140
			PIII Imp	5	3	--	--	114	114	4	--	--	15	86	86	3	7	--	127	127	83
66	Shirk Street/ Access B	TWSC	PIII Alt	--	0	--	0	--	--	0	--	--	--	--	--	--	--	--	--	--	2
			PIII Imp	--	0	0	0	--	--	0	0	--	--	--	--	--	--	--	--	--	1
67	Riggin Avenue/ Access D	TWSC	PIII Alt	--	--	--	--	--	--	--	--	21	--	0	0	--	--	--	--	0	0
			PIII Imp	--	--	--	--	--	--	--	--	21	--	0	0	--	--	--	--	0	0
78	Riggin Avenue/ Access C	TWSC	PIII Alt	--	--	--	--	--	--	--	--	34	--	0	0	--	--	--	--	0	0
			PIII Imp	--	--	--	--	--	--	--	--	34	--	0	0	--	--	--	--	0	0
79	Shirk Street/ Access A	TWSC	PIII Alt	--	0	--	0	--	--	0	--	--	--	--	--	--	--	--	--	--	1
			PIII Imp	--	0	0	0	--	--	0	0	--	--	--	--	--	--	--	--	--	1
80	Shirk Street/ Access F	Signal	PIII Alt	--	105	--	61	145	--	64	--	0	--	0	--	--	--	--	--	145	--
			PIII Imp	--	28	43	61	20	--	39	39	0	--	0	--	--	--	--	--	145	--
81	Denton Street/ Access E	TWSC	PIII Alt	--	15	--	--	--	--	0	--	--	--	122	--	--	--	--	0	--	--
			PIII Imp	--	15	--	--	--	--	0	--	--	--	122	--	--	--	--	0	--	--

Source: Kittelson & Associates, Inc., 2023
Notes: Bolded values exceed 300 feet, the required turn pocket length on City of Visalia arterials for left- and right-turn movements.
TWSC – two-way stop-controlled; AWSC – all-way stop-controlled; RBT - roundabout

Conclusion

The operations analysis showed that all intersections are expected to operate to standard for Costco's opening day (correlated with Phase I buildout of Carleton Acres) with the exceptions of Riggin Avenue/Denton Street, which is expected to operate at LOS F in the PM and Saturday midday peak hours. For Riggin Avenue/Denton Street to operate at an acceptable LOS, the following improvements are recommended to be constructed in advance of Costco's opening day:

- Construct a signal at Riggin Avenue/Denton Street
- Construct one northbound left-turn lane and two southbound left-turn lanes at Riggin Avenue/Denton Street

In addition to the Riggin Avenue/Denton Street recommendations, the following improvements are recommended to be constructed in advance of Costco's opening day to ensure queueing does not exceed City standards at any intersections or site access driveways:

- Construct the additional commercial access F on Shirk Street
- Widen Shirk Street to two travel lanes in the northbound direction

The following improvements identified through the Carleton Acres Specific Plan traffic study to be constructed as part of buildout of Phase III of the Specific Plan indeed will be necessary by completion of Phase III buildout with the presence of Costco:

- Construct two westbound left-turn lanes and one eastbound left-turn lane at Shirk Street/Riggin Avenue

Table 27 and Table 28 present the recommended number of through and turn lanes and minimum turn-lane lengths for Costco's opening day, correlated with buildout of Phase I of Carleton Acres, and buildout of Phase III of Carleton Acres, respectively.

Several actions need to take place before Costco's opening day. After the Tulare County Local Agency Formation Commission (LAFCO) approves annexation of the Project property and other portions of Carleton Acres into Visalia (expected in the first quarter of 2024), Costco would proceed with next-steps for City approval of the site development, eventually obtaining building permits and breaking ground for construction.

There are existing plans to widen Shirk Street from one to two northbound lanes and Riggin Avenue from two to four travel lanes (two lanes each in the westbound and eastbound directions). These roadway widenings require relocation of utility poles along Shirk Street and Riggin Avenue. The City has applied to Southern California Edison (SCE) for the pole relocation. The application is currently under SCE review. This transportation study recommends construction of all Phase I off-site improvements listed in Table 17 and Table 18 be completed before Costco's opening day.

The overall timeline for land annexation, utility pole relocation, roadway widening, and suggested intersection improvement construction is in flux and will determine the start date for Costco's on-site construction. On-site construction of the Project is anticipated to take six months. Costco Wholesale intends to open the warehouse, fuel station, and car wash only after the roadway widening and intersection improvements are completed.

TABLE 27. SUGGESTED NUMBER OF LANES AND MINIMUM TURN LANE LENGTHS – COSTCO OPENING DAY

ID	Intersection	Control	Recommended Number of Lanes (Recommended Minimum Turn Lane Length)											
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
26	Shirk Street & Sedona Avenue	TWSC	--	2	1 (265 ft.)	--	1	--	--	1	--	--	--	1
27	Denton Street & Sedona Avenue	RBT	--	1	--	--	1	--	--	1	--	--	1	--
38	Shirk Street & Riggin Avenue	Signalized	1 (60 ft.)	2	1 (265 ft.)	1 (75 ft.)	1	1 (265 ft.)	1 (90 ft.)	2	1 (265 ft.)	1 (220 ft.)	2	1 (265 ft.)
39	Riggin Avenue & Denton Street	Signalized	1 (25 ft.)	1	--	2 (95 ft.)	1	--	1 (25 ft.)	2	1 (265 ft.)	1 (25 ft.)	2	1 (265 ft.)
66	Shirk Street Access B	TWSC	--	2	1 (265 ft.)[1]	--	1	--	--	--	--	--		1[2]
67	Riggin Avenue Access D	TWSC	--	--	--	--	--	1[2]	--	2	--	--	2	1 (265 ft.)
78	Riggin Avenue Access C	TWSC	--	--	--	--	--	1[2]	--	2	--	--	2	1 (265 ft.)
79	Shirk Street Access A	TWSC	--	2	1 (265 ft.)[1]	--	1	--	--	--	--	--	--	1[2]
80	Shirk Street Access F	Signalized	1 (25 ft.)	2	1 (265 ft.)[1]	1 (150 ft.)	1	1 (265 ft.)	--	1	--	--	1	--
81	Denton Street Access E	TWSC	--	1	--	--	1	--	--	1	--	--	1	--

[1] Due to constraints associated with spacing of site accesses spacing relative to one another and/or to an adjacent intersection, it may not be feasible to construct deceleration lanes of 265 feet on Shirk Street at Accesses A, B, or F.
[2] Turn length is internal to the Costco site; therefore, no turn lane length recommendations are made.

TABLE 28. SUGGESTED NUMBER OF LANES AND MINIMUM TURN LANE LENGTHS - PHASE III

ID	Intersection	Control	Recommended Number of Lanes (Recommended Minimum Turn Lane Length)											
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
26	Shirk Street & Sedona Avenue	TWSC	--	2	1 (265 ft.)	--	1	--	--	1	--	--	--	1
27	Denton Street & Sedona Avenue	RBT	--	1	--	--	1	--	--	1	--	--	1	--
38	Shirk Street & Riggin Avenue	Signalized	1 (150 ft.)	2	1 (265 ft.)	1 (140 ft.)	1	1 (265 ft.)	1 (120 ft.)	2	1 (265 ft.)	2 (170 ft.)	2	1 (265 ft.)
39	Riggin Avenue & Denton Street	Signalized	1 (25 ft.)	1	--	2 (145 ft.)	1	--	1 (25 ft.)	2	1 (265 ft.)	1 (25 ft.)	2	1 (265 ft.)
66	Shirk Street Access B	TWSC	--	2	1 (265 ft.)[1]	--	1	--	--	--	--	--		1[2]
67	Riggin Avenue Access D	TWSC	--	--	--	--	--	1[2]	--	2	--	--	2	1 (265 ft.)
78	Riggin Avenue Access C	TWSC	--	--	--	--	--	1[2]	--	2	--	--	2	1 (265 ft.)
79	Shirk Street Access A	TWSC	--	2	1 (265 ft.)[1]	--	1	--	--	--	--	--	--	1[2]
80	Shirk Street Access F	Signalized	1 (25 ft.)	2	1 (265 ft.)[1]	1 (150 ft.)	1	1 (265 ft.)	--	1	--	--	1	--
81	Denton Street Access E	TWSC	--	1	--	--	1	--	--	1	--	--	1	--

[1] Due to constraints associated with spacing of site accesses spacing relative to one another and/or to an adjacent intersection, it may not be feasible to construct deceleration lanes of 265 feet on Shirk Street at Accesses A, B, or F.
[2] Turn length is internal to the Costco site; therefore, no turn lane length recommendations are made.

Appendix A – Summary of Offsite Recommendations



Visalia Costco Phase I Offsite Recommendations
Visalia, CA

Figure
A1

KITTELSON & ASSOCIATES

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere



Visalia Costco Phase III Offsite Recommendations
Visalia, CA

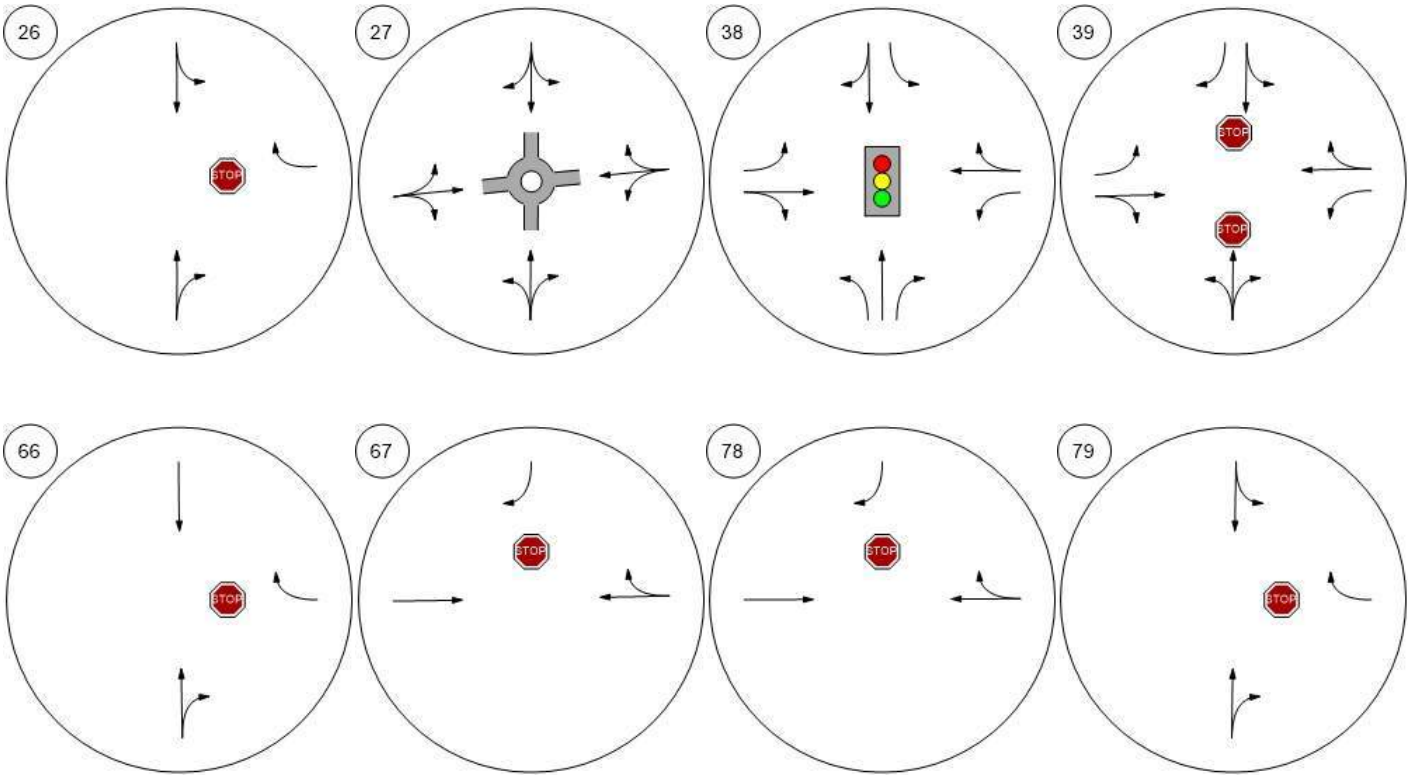
Figure
A2

KITTELSON & ASSOCIATES

Appendix B - Study intersections, Lane Configuration, and Traffic Control Type

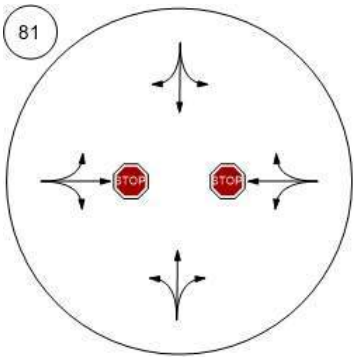
Lane Configuration and Traffic Control





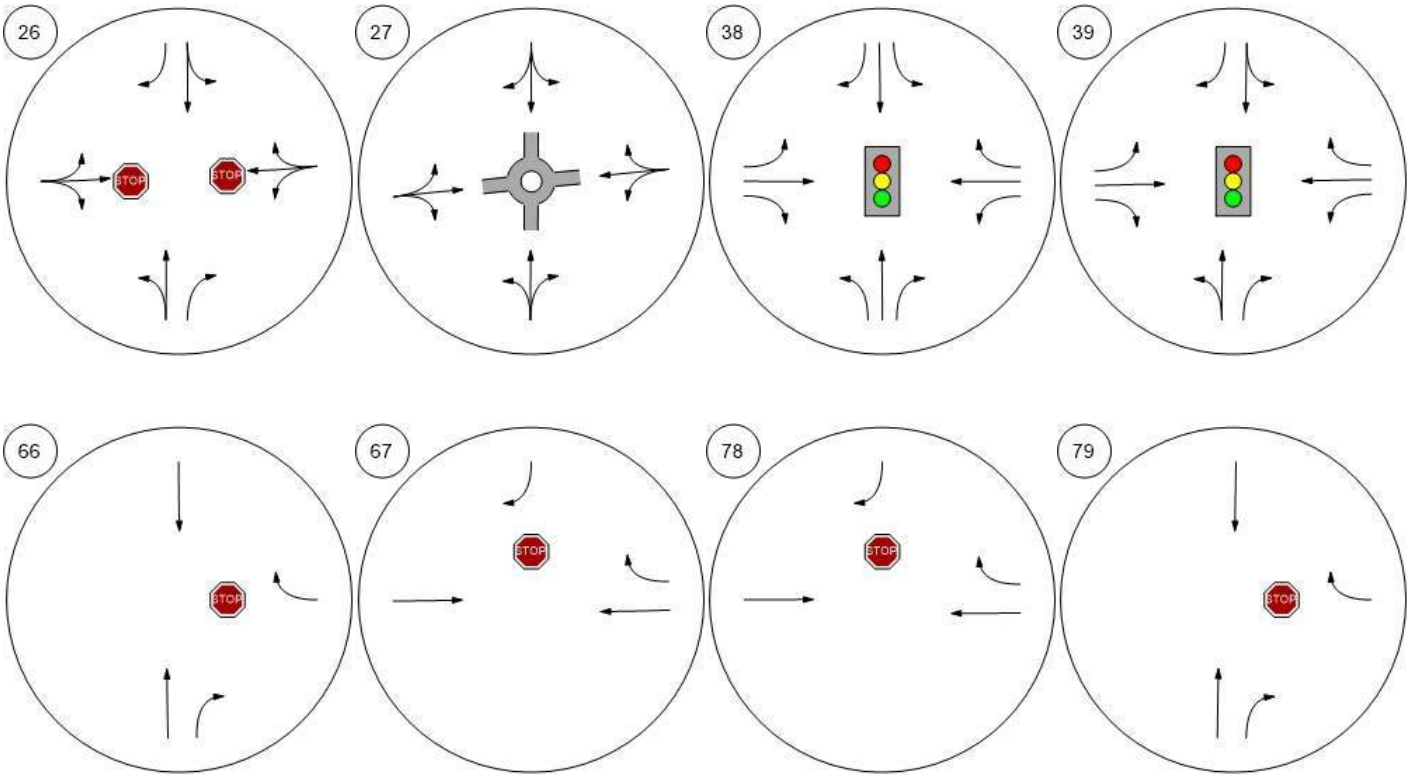
Lane Configuration and Traffic Control





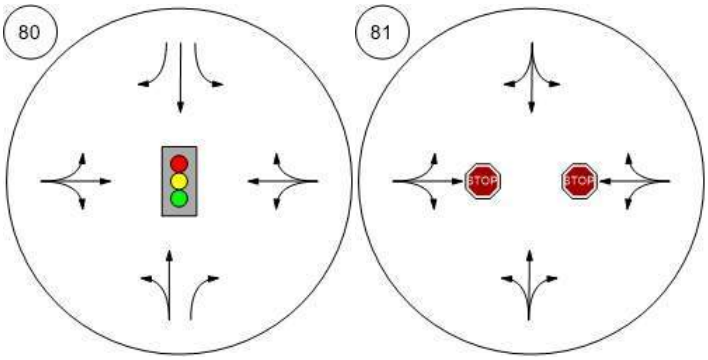
Lane Configuration and Traffic Control





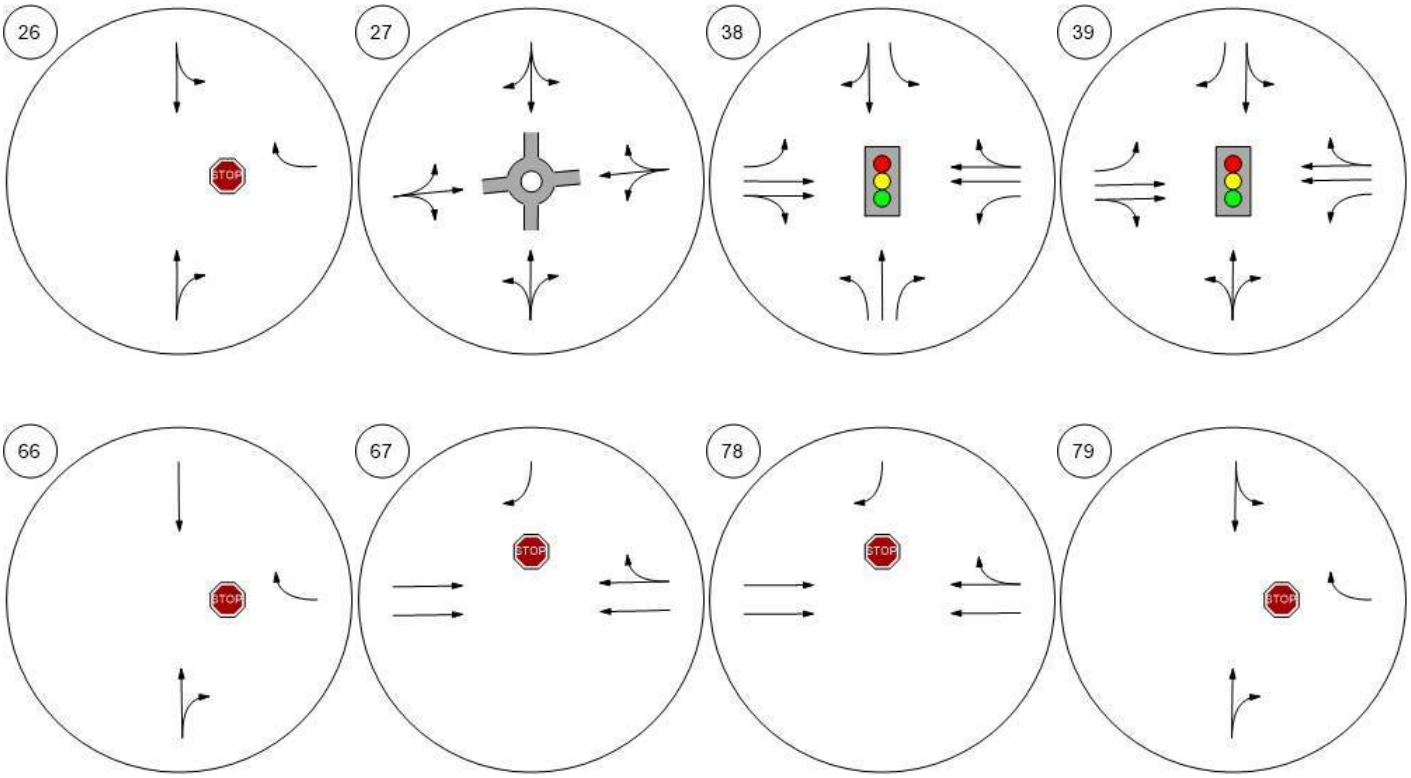
Lane Configuration and Traffic Control





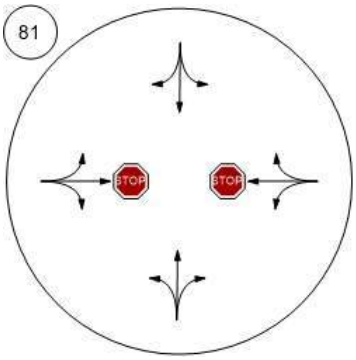
Lane Configuration and Traffic Control





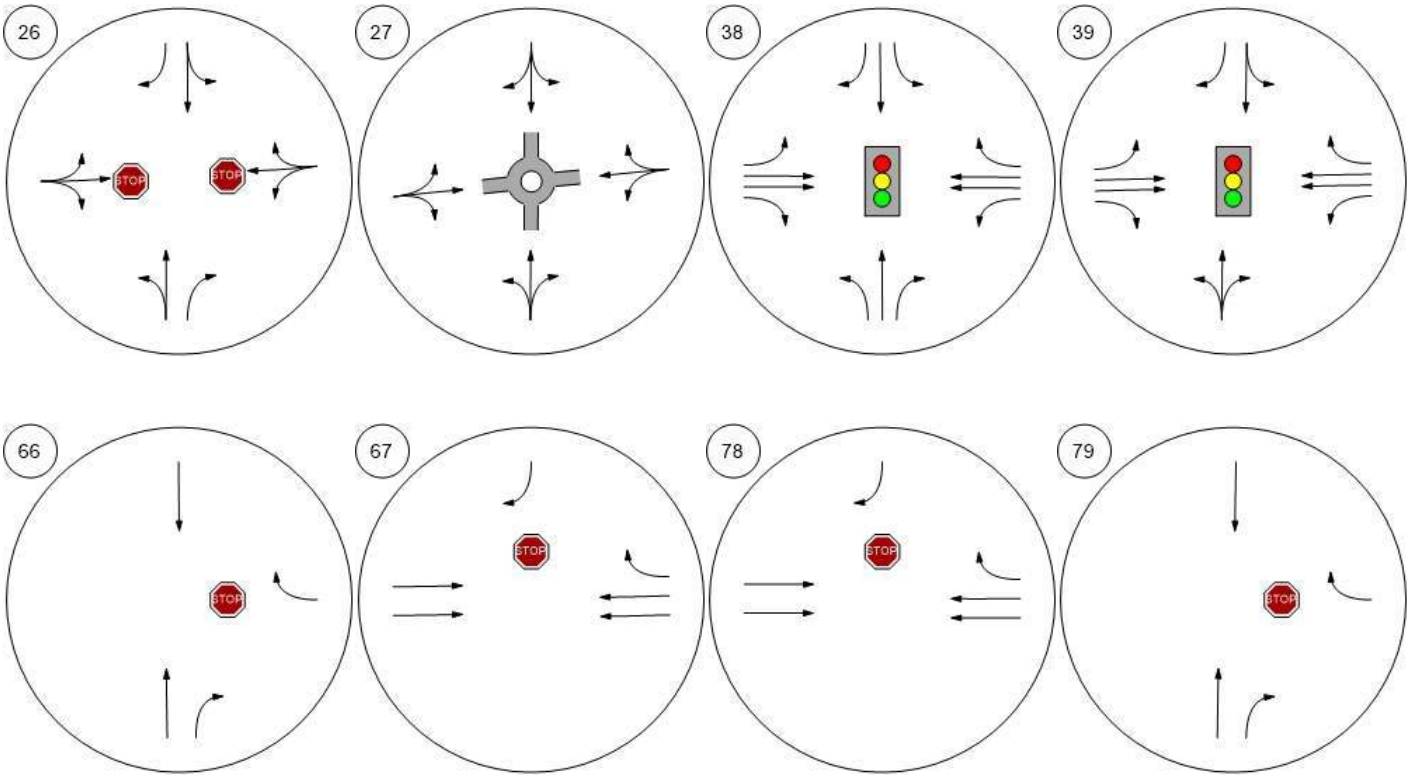
Lane Configuration and Traffic Control





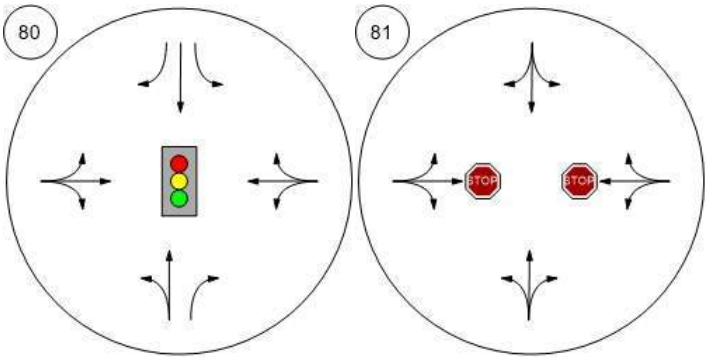
Lane Configuration and Traffic Control





Lane Configuration and Traffic Control





Appendix C - Visalia Costco Trip Generation Memorandum

KITTELSON & ASSOCIATES
155 Grand Avenue, Suite 505
Oakland, CA 94612
P 510.839.1742

MEMORANDUM

June 23, 2022 Project #: 27808

To: Kim Katz, Costco Wholesale

From: Amy Lopez

RE: Visalia Costco Warehouse Retail Center – Trip Generation and Site Access

Kittelson & Associates, Inc. (Kittelson) has prepared this summary of the trip characteristics expected for the construction of a new Costco warehouse retail center to be located at the northeast quadrant of the N Shirk St/W Riggin Ave intersection in Visalia, CA and within the proposed Carleton Acres Specific Plan area (project). This memorandum forecasts the anticipated trip generation for the project.

Costco Wholesale is proposing to construct an approximately 160,523-square-foot Costco warehouse retail center, on-site circulation and landscaping improvements on the property located at located at the northeast quadrant of the N Shirk St/W Riggin Ave intersection in Visalia, CA.

TRIP GENERATION

Costco Trip Database

For more than 20 years, Kittelson has maintained a database of trip data and travel characteristics for Costco Wholesale. The database contains transportation information such as trip rates and trip type percentages for Costco locations throughout the United States as well as Canada and Mexico. The database is updated periodically when new Costco traffic counts or other such information become available to Kittelson. To best evaluate the anticipated transportation characteristics of the proposed warehouse in Visalia, Kittelson used the Costco trip database to develop a trip generation estimate as it provides use-specific data that most accurately represents the anticipated transportation characteristics of this unique development type.

The warehouse trip rates summarized herein rely on data collection conducted at Costco sites located across the western region of the United States. The trip studies were completed using industry standard engineering practices consistent with guidance within the Institute of Transportation Engineers (ITE) standard reference, *Trip Generation Manual*, 11th Edition. These cordon surveys were conducted between 2015 and 2021 and include 20 surveys of Costco warehouse retail centers in California, Arizona, Oregon, Utah, and Washington. The Costco buildings surveyed range in size between 121,771 square feet and 235,298 square feet, with an average size of 156,526 square feet. The existing Costco locations all included fuel stations, ranging from 20 to 32 fueling positions, and one location also includes a car wash.

Kittelson developed primary, pass-by, and diverted trip percentages based on member surveys taken at existing Costco warehouses. These trip types are described below.

- Pass-by Trips: existing trips on roadways adjacent to the site for which drivers turn into the Costco site and then, after shopping, continue to their ultimate destination
- Diverted Trips: existing trips on nearby roadways in which a driver decides to drive out of their way for a distance to shop at Costco and, when their shopping is concluded, continues their trip to the ultimate destination
- Primary Trips: an entirely new trip on the roadway system for the express purpose of driving to and from Costco

Table 1: Trip Characteristics for Costco Warehouse

	Weekday			Saturday	
	Daily	AM Peak Hour	PM Peak Hour	Daily	Midday Peak Hour
Trip Rate (per KSF*)	99.38	2.59	8.39	112.53	11.15
Ins		0.56	0.47		0.49
Outs		0.44	0.53		0.51
Pass-by Trips			20.4%		20.1%
Diverted Trips			28.3%		20.7%
Primary Trips			51.2%		59.1%

Source: Kittelson & Associates, Inc., 2022
* KSF = 1,000 square feet

Project Trip Generation Comparison

Kittelson estimated trip generation for the project for weekday daily and AM/PM peak hours, and for Saturday daily and midday peak hour using trip rates presented in Table 1. Pass-by and diverted rates for the weekday PM peak hour were used to estimate weekday daily pass-by and diverted trips. Likewise, Saturday midday peak hour rates for pass-by and diverted trips were used to develop Saturday daily pass-by and diverted trips. Table 2 presents the trip generation for the Visalia Costco warehouse retail center.

Table 2: Visalia Costco Warehouse Retail Center Trip Generation

			Weekday AM Peak			Weekday PM Peak				Saturday Midday Peak		
Land Use	Size (sq.ft.)	Weekday Daily	Total	In	Out	Total	In	Out	Saturday Daily	Total	In	Out
Total Site Trips	160,526	15,952	415	231	184	1,346	631	715	18,064	1,790	878	912
Pass-by Trips		3,261	85	47	38	275	129	146	3,633	360	177	182
Diverted Trips		4,517	118	64	52	381	179	202	3,733	370	181	188
Primary Trips		**8,174**	**212**	**120**	**94**	**690**	**323**	**367**	**10,698**	**1,060**	**520**	**540**

Source: Kittelson & Associates, Inc., 2022

As shown in Table 2, the project is estimated to generate 8,174 weekday daily primary trips. Of these, 212 are estimated to occur in the weekday AM peak hour (120 inbound / 94 outbound), and 690 are estimated to occur in the weekday PM peak hour (323 inbound / 367 outbound). The project is estimated to generate 10,698 Saturday daily primary trips. Of these, 1,060 are estimated to occur during the Saturday midday peak hour (520 inbound / 541 outbound).

SITE ACCESS

Figure 1 presents preliminary trip distribution percentages for the project based on:

- Existing local street network
- Streets planned as part of the Carleton Acres Specific Plan
- Location of the existing Costco warehouse on Cameron Ave in Visalia
- Home locations of existing Costco members in the greater Visalia area

Figure 2 presents the preferred site accesses for the project, which include:

- Full access on N Shirk St at the northwest corner of the site
- Right-in/right-out/left-in access on N Shirk St
- Two right-in/right-out accesses on W Riggin Ave
- Full access at the Denton St/W Riggin Ave intersection

Considering in combination the total trips expected to the site and the anticipated trip distribution, the accesses identified in Figure 2 are recommended to:

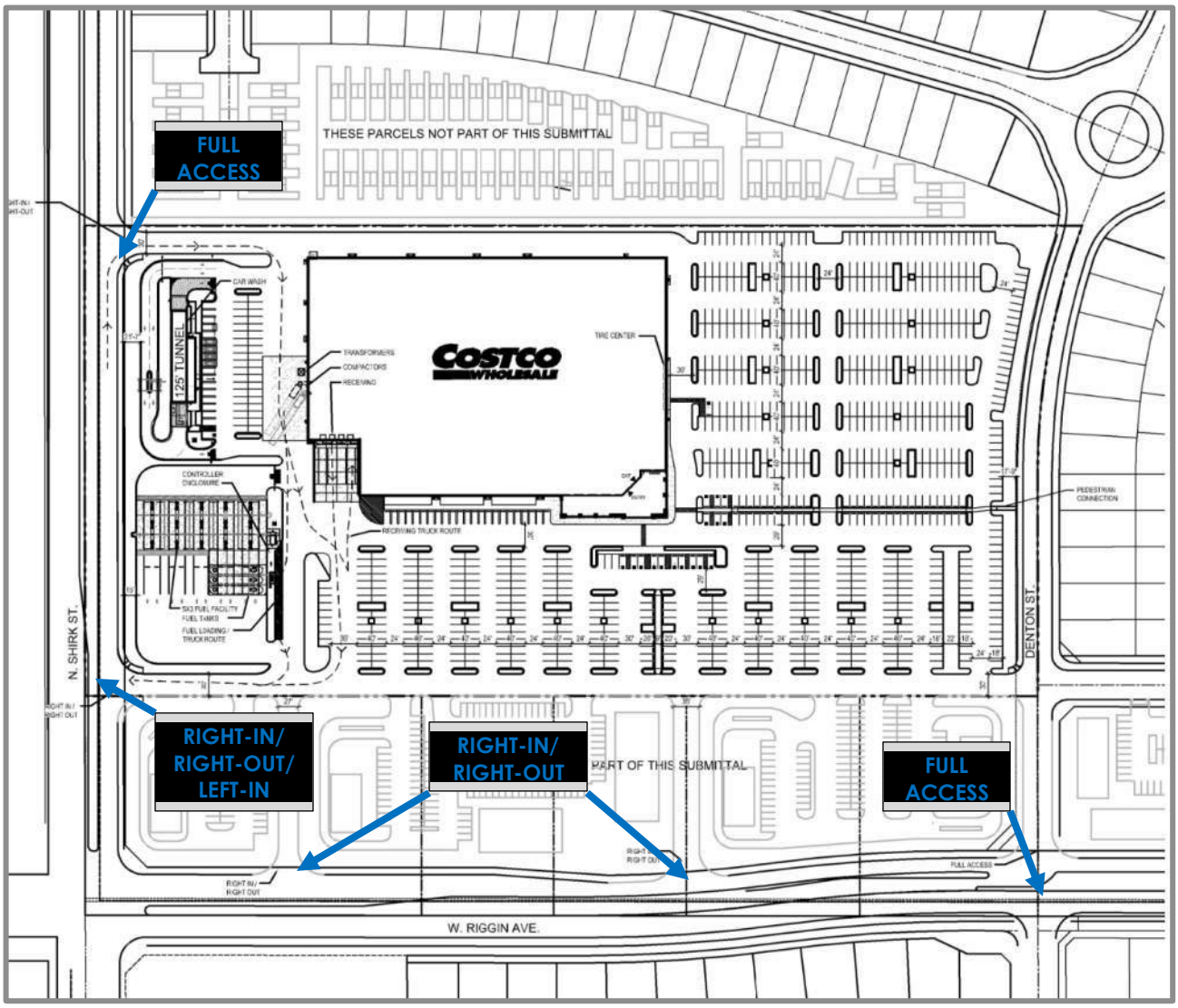
- Distribute Costco member traffic across multiple access points
- Provide site access options for all directions of travel for Costco members and other visitors to the adjacent commercial properties

Figure 1: Preliminary Trip Distribution



Sources: Kittelson & Associates, Inc., 2022; Google Maps, 2022

Figure 2: Preferred Site Accesses



Sources: Kittelson & Associates, Inc., 2022; MG2, 2022

NEXT STEPS

Please contact Amy Lopez at alopez@kittelson.com or 510-433-8064 with any questions or to schedule a meeting regarding the information presented herein.

Appendix D – Phase I Vistro 2022 Output

Visalia Costco

Vistro File: H:\...\Visalia Costco_20230503.vistro
Report File: H:\...\P1_PM.pdf

Scenario 1 Phase 1 PM
5/4/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
26	Shirk Street and Sedona Avenue	Two-way stop	HCM 7th Edition	WB Right	0.021	9.0	A
27	Denton Street and Sedona Avenue	Roundabout	HCM 7th Edition	SB Thru		2.8	A
38	Shirk Street and Riggin Avenue	Signalized	HCM 7th Edition	EB Thru	0.908	53.6	D
39	Denton Street and Riggin Avenue	Two-way stop	HCM 7th Edition	SB Left	5.154	1,947.9	F
66	Shirk Street and South Commercial Driveway (Site Access B)	Two-way stop	HCM 7th Edition	WB Right	0.016	11.7	B
67	East Commercial Driveway and Riggin Avenue (SIte Access D)	Two-way stop	HCM 7th Edition	SB Right	0.378	15.9	C
78	West Commercial Driveway and Riggin Avenue (Site Access C)	Two-way stop	HCM 7th Edition	SB Right	0.380	16.0	C
79	Shirk Street and North Commercial Driveway (Site Access A)	Two-way stop	HCM 7th Edition	WB Right	0.012	9.9	A
81	Denton Street and Site Access E	Two-way stop	HCM 7th Edition	EB Left	0.005	17.1	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 26: Shirk Street and Sedona Avenue

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

Name	Shirk Street			Shirk Street			Sedona Avenue			Sedona Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Shirk Street			Shirk Street			Sedona Avenue			Sedona Avenue		
Base Volume Input [veh/h]	18	47	124	17	30	11	26	35	75	278	34	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	18	0	0	19	0	0	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	65	124	17	49	11	26	35	75	278	34	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	16	31	4	12	3	7	9	19	70	9	5
Total Analysis Volume [veh/h]	18	65	124	17	49	11	26	35	75	278	34	19
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.02
d_M, Delay for Movement [s/veh]	7.36	0.00	0.00	7.62	0.00	0.00	0.00	0.00	8.84	0.00	0.00	8.98
Movement LOS	A	A	A	A	A	A			A			A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.03	0.03	0.03	0.00	0.00	0.24	0.00	0.00	0.06
95th-Percentile Queue Length [ft/ln]	0.86	0.86	0.86	0.74	0.74	0.74	0.00	0.00	5.99	0.00	0.00	1.58
d_A, Approach Delay [s/veh]	0.64			1.68			8.84			8.98		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.90											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 27: Denton Street and Sedona Avenue

Control Type:	Roundabout	Delay (sec / veh):	2.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Denton Street			Denton Street			Sedona Avenue			Sedona Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Sedona Avenue			Sedona Avenue		
Base Volume Input [veh/h]	0	19	0	2	16	14	15	2	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	19	0	2	16	14	15	2	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	5	0	1	4	4	4	1	0	0	0	0
Total Analysis Volume [veh/h]	2	19	0	2	16	14	15	2	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	19			2			18			37		
Exiting Flow Rate [veh/h]	16			35			16			4		
Demand Flow Rate [veh/h]	2	19	0	2	16	14	15	2	0	0	0	0
Adjusted Demand Flow Rate [veh/h]	2	19	0	2	16	14	15	2	0	0	0	0

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	22	33	18	0
Capacity of Entry and Bypass Lanes [veh/h]	1353	1378	1355	1330
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1327	1351	1328	1304
X, volume / capacity	0.02	0.02	0.01	0.00

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.05	0.07	0.04	0.00
95th-Percentile Queue Length [ft]	1.21	1.82	0.97	0.00
Approach Delay [s/veh]	2.84	2.85	2.81	2.76
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	2.84			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 38: Shirk Street and Riggin Avenue

Control Type:	Signalized	Delay (sec / veh):	53.6
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.908

Intersection Setup

Name	Shirk Street			Shirk Street			Riggin Avenue			Riggin Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Shirk Street			Shirk Street			Riggin Avenue			Riggin Avenue		
Base Volume Input [veh/h]	70	202	169	63	185	26	26	432	82	80	154	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	289	6	0	0	0	81	2	0	317	90	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	491	175	63	185	26	107	434	82	397	244	53
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	123	44	16	46	7	27	109	21	99	61	13
Total Analysis Volume [veh/h]	70	491	175	63	185	26	107	434	82	397	244	53
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	9	38	0	9	38	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C
C, Cycle Length [s]	106	106	106	106	106	106	106	106	106
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	29	29	5	29	8	30	25	47
g / C, Green / Cycle	0.05	0.28	0.28	0.05	0.27	0.08	0.28	0.24	0.45
(v / s)_i Volume / Saturation Flow Rate	0.04	0.26	0.11	0.04	0.12	0.06	0.28	0.22	0.16
s, saturation flow rate [veh/h]	1781	1870	1589	1781	1830	1781	1819	1781	1813
c, Capacity [veh/h]	92	518	440	83	498	136	517	429	813
d1, Uniform Delay [s]	49.39	37.37	30.97	49.71	31.59	47.85	37.74	39.11	19.19
k, delay calibration	0.11	0.39	0.11	0.11	0.11	0.11	0.45	0.29	0.14
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.31	24.37	0.58	13.42	0.57	9.52	37.27	19.33	0.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.95	0.40	0.76	0.42	0.79	1.00	0.93	0.37
d, Delay for Lane Group [s/veh]	61.69	61.75	31.55	63.13	32.16	57.37	75.02	58.44	19.55
Lane Group LOS	E	E	C	E	C	E	E	E	B
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.13	15.71	3.68	1.95	4.49	3.12	18.42	12.21	4.81
50th-Percentile Queue Length [ft/ln]	53.30	392.78	91.88	48.70	112.15	77.94	460.43	305.21	120.18
95th-Percentile Queue Length [veh/ln]	3.84	22.21	6.62	3.51	7.96	5.61	25.46	17.94	8.40
95th-Percentile Queue Length [ft/ln]	95.94	555.29	165.38	87.65	198.98	140.30	636.39	448.47	210.07

Movement, Approach, & Intersection Results

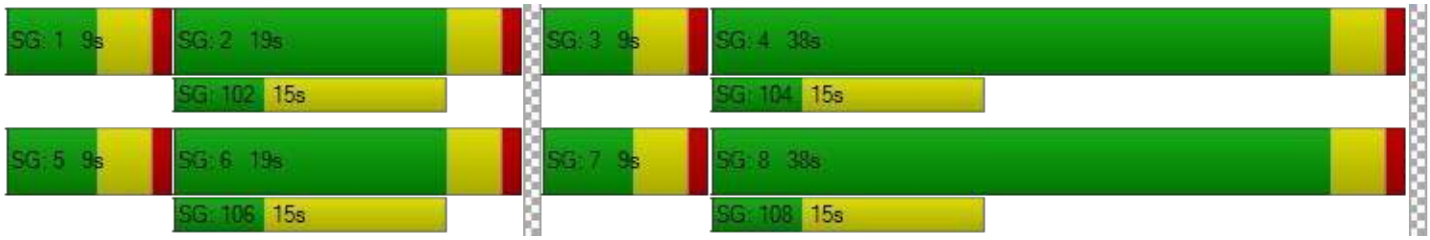
d_M, Delay for Movement [s/veh]	61.69	61.75	31.55	63.13	32.16	32.16	57.37	75.02	75.02	58.44	19.55	19.55
Movement LOS	E	E	C	E	C	C	E	E	E	E	B	B
d_A, Approach Delay [s/veh]	54.56			39.28			71.99			41.80		
Approach LOS	D			D			E			D		
d_I, Intersection Delay [s/veh]	53.62											
Intersection LOS	D											
Intersection V/C	0.908											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.22	44.22	44.22	44.22
l_p,int, Pedestrian LOS Score for Intersection	2.482	2.250	2.262	2.393
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	284	284	643	643
d_b, Bicycle Delay [s]	38.90	38.90	24.31	24.31
l_b,int, Bicycle LOS Score for Intersection	2.774	2.012	2.588	2.705
Bicycle LOS	C	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 39: Denton Street and Riggin Avenue

Control Type:	Two-way stop	Delay (sec / veh):	1,947.9
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	5.154

Intersection Setup

Name	Denton Street			Denton Street			Riggin Avenue			Riggin Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Riggin Avenue			Riggin Avenue		
Base Volume Input [veh/h]	9	0	7	16	0	0	0	607	15	14	373	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	544	0	8	8	0	0	0	284	214
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	0	7	560	0	8	8	607	15	14	657	214
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	2	140	0	2	2	152	4	4	164	54
Total Analysis Volume [veh/h]	9	0	7	560	0	8	8	607	15	14	657	214
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No			
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.01	5.15	0.00	0.02	0.01	0.01	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	40.71	38.90	14.69	1947.88	1942.18	14.10	9.70	0.00	0.00	8.81	0.00	0.00
Movement LOS	E	E	B	F	F	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.32	0.32	0.32	59.92	59.92	0.06	0.03	0.00	0.00	0.04	0.00	0.00
95th-Percentile Queue Length [ft/ln]	7.98	7.98	7.98	1498.10	1498.10	1.51	0.78	0.00	0.00	1.11	0.00	0.00
d_A, Approach Delay [s/veh]	29.33			1920.64			0.12			0.14		
Approach LOS	D			F			A			A		
d_I, Intersection Delay [s/veh]	520.06											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 66: Shirk Street and South Commercial Driveway (Site Access B)

Control Type:	Two-way stop	Delay (sec / veh):	11.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.016

Intersection Setup

Name	Shirk Street		Shirk Street		South Commercial Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Shirk Street		Shirk Street		South Commercial Driveway	
Base Volume Input [veh/h]	247	0	0	308	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	190	190	0	0	0	9
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	437	190	0	308	0	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	109	48	0	77	0	2
Total Analysis Volume [veh/h]	437	190	0	308	0	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	11.69
Movement LOS	A	A		A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.05
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	1.25
d_A, Approach Delay [s/veh]	0.00		0.00		11.69	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.11					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 67: East Commercial Driveway and Riggin Avenue (Site Access D)

Control Type:	Two-way stop	Delay (sec / veh):	15.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.378

Intersection Setup

Name	East Commercial Driveway		Riggin Avenue		Riggin Avenue	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	East Commercial Driveway		Riggin Avenue		Riggin Avenue	
Base Volume Input [veh/h]	0	0	0	539	369	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	199	0	8	93	199
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	199	0	547	462	199
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	50	0	137	116	50
Total Analysis Volume [veh/h]	0	199	0	547	462	199
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.38	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	15.92	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	1.75	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	43.67	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.92		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	2.25					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 78: West Commercial Driveway and Riggin Avenue (Site Access C)

Control Type:	Two-way stop	Delay (sec / veh):	16.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.380

Intersection Setup

Name	West Commercial Driveway		Riggin Avenue		Riggin Avenue	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	West Commercial Driveway		Riggin Avenue		Riggin Avenue	
Base Volume Input [veh/h]	0	0	0	596	311	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	199	0	8	218	75
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	199	0	604	529	75
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	50	0	151	132	19
Total Analysis Volume [veh/h]	0	199	0	604	529	75
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.38	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	16.04	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	1.76	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	44.10	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	16.04		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	2.27					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 79: Shirk Street and North Commercial Driveway (Site Access A)

Control Type:	Two-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

Intersection Setup

Name	Shirk Street		Shirk Street		North Commercial Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Shirk Street		Shirk Street		North Commercial Driveway	
Base Volume Input [veh/h]	191	0	0	284	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	190	19	0	0	9
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	200	190	19	284	0	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	48	5	71	0	2
Total Analysis Volume [veh/h]	200	190	19	284	0	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.10	0.00	0.00	9.90
Movement LOS	A	A	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.03	0.03	0.00	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.80	0.80	0.00	0.92
d_A, Approach Delay [s/veh]	0.00		0.51		9.90	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.35					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 81: Denton Street and Site Access E

Control Type:	Two-way stop	Delay (sec / veh):	17.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Denton Street			Denton Street			Site Access E			Site Access E		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Site Access E			Site Access E		
Base Volume Input [veh/h]	0	19	0	0	16	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	222	0	0	0	0	0	2	0	552	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	222	19	0	0	16	0	2	0	552	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	5	0	0	4	0	1	0	138	0	0	0
Total Analysis Volume [veh/h]	222	19	0	0	16	0	2	0	552	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.56	0.00	0.00	7.25	0.00	0.00	17.11	17.30	12.07	31.79	13.62	8.40
Movement LOS	A	A	A	A	A	A	C	C	B	D	B	A
95th-Percentile Queue Length [veh/ln]	0.44	0.44	0.44	0.00	0.00	0.00	3.14	3.14	3.14	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	11.09	11.09	11.09	0.00	0.00	0.00	78.59	78.59	78.59	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	6.96			0.00			12.09			17.94		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	10.33											
Intersection LOS	C											

Visalia Costco

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Report File: H:\...\P1_PM_Alt.pdf

Scenario 5 Phase 1 PM_Alt
5/4/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
26	Shirk Street and Sedona Avenue	Two-way stop	HCM 7th Edition	WB Right	0.021	9.0	A
27	Denton Street and Sedona Avenue	Roundabout	HCM 7th Edition	SB Thru		2.8	A
38	Shirk Street and Riggin Avenue	Signalized	HCM 7th Edition	EB Thru	0.883	48.6	D
39	Denton Street and Riggin Avenue	Signalized	HCM 7th Edition	WB Thru	1.150	48.9	D
66	Shirk Street and South Commercial Driveway (Site Access B)	Two-way stop	HCM 7th Edition	WB Right	0.010	12.4	B
67	East Commercial Driveway and Riggin Avenue (SIte Access D)	Two-way stop	HCM 7th Edition	SB Right	0.239	14.6	B
78	West Commercial Driveway and Riggin Avenue (Site Access C)	Two-way stop	HCM 7th Edition	SB Right	0.313	15.0	C
79	Shirk Street and North Commercial Driveway (Site Access A)	Two-way stop	HCM 7th Edition	WB Right	0.007	9.5	A
80	Shirk Street and Central Access Driveway (Site Access F)	Signalized	HCM 7th Edition	WB Left	0.444	8.3	A
81	Denton Street and Site Access E	Two-way stop	HCM 7th Edition	EB Left	0.004	16.0	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 26: Shirk Street and Sedona Avenue

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

Name	Shirk Street			Shirk Street			Sedona Avenue			Sedona Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Shirk Street			Shirk Street			Sedona Avenue			Sedona Avenue		
Base Volume Input [veh/h]	18	47	124	17	30	11	26	35	75	278	34	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	18	0	1	18	0	0	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	65	124	18	48	11	26	35	75	278	34	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	16	31	5	12	3	7	9	19	70	9	5
Total Analysis Volume [veh/h]	18	65	124	18	48	11	26	35	75	278	34	19
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.02
d_M, Delay for Movement [s/veh]	7.36	0.00	0.00	7.62	0.00	0.00	0.00	0.00	8.83	0.00	0.00	8.98
Movement LOS	A	A	A	A	A	A			A			A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.03	0.03	0.03	0.00	0.00	0.24	0.00	0.00	0.06
95th-Percentile Queue Length [ft/ln]	0.86	0.86	0.86	0.79	0.79	0.79	0.00	0.00	5.98	0.00	0.00	1.58
d_A, Approach Delay [s/veh]	0.64			1.78			8.83			8.98		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.92											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 27: Denton Street and Sedona Avenue

Control Type:	Roundabout	Delay (sec / veh):	2.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Denton Street			Denton Street			Sedona Avenue			Sedona Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Sedona Avenue			Sedona Avenue		
Base Volume Input [veh/h]	0	19	0	2	16	14	15	2	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	0	0	0	0	0	0	1	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	19	0	2	16	14	15	2	1	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	5	0	1	4	4	4	1	0	0	0	0
Total Analysis Volume [veh/h]	2	19	0	2	16	14	15	2	1	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	19			2			18			37		
Exiting Flow Rate [veh/h]	17			35			16			4		
Demand Flow Rate [veh/h]	2	19	0	2	16	14	15	2	1	0	0	0
Adjusted Demand Flow Rate [veh/h]	2	19	0	2	16	14	15	2	1	0	0	0

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	22	33	19	0
Capacity of Entry and Bypass Lanes [veh/h]	1353	1378	1355	1330
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1327	1351	1328	1304
X, volume / capacity	0.02	0.02	0.01	0.00

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.05	0.07	0.04	0.00
95th-Percentile Queue Length [ft]	1.21	1.82	1.03	0.00
Approach Delay [s/veh]	2.84	2.85	2.82	2.76
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	2.84			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 38: Shirk Street and Riggin Avenue

Control Type:	Signalized	Delay (sec / veh):	48.6
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.883

Intersection Setup

Name	Shirk Street			Shirk Street			Riggin Avenue			Riggin Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Shirk Street			Shirk Street			Riggin Avenue			Riggin Avenue		
Base Volume Input [veh/h]	70	202	169	63	185	26	26	432	82	80	154	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	280	15	54	91	27	79	4	0	226	63	101
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	482	184	117	276	53	105	436	82	306	217	144
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	121	46	29	69	13	26	109	21	77	54	36
Total Analysis Volume [veh/h]	70	482	184	117	276	53	105	436	82	306	217	144
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	50	0	11	50	0	15	55	0	34	74	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C
C, Cycle Length [s]	103	103	103	103	103	103	103	103	103
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	29	29	9	32	8	30	20	42
g / C, Green / Cycle	0.05	0.28	0.28	0.08	0.31	0.08	0.29	0.19	0.41
(v / s)_i Volume / Saturation Flow Rate	0.04	0.26	0.12	0.07	0.18	0.06	0.28	0.17	0.21
s, saturation flow rate [veh/h]	1781	1870	1589	1781	1818	1781	1819	1781	1747
c, Capacity [veh/h]	93	518	440	150	562	136	527	346	713
d1, Uniform Delay [s]	48.39	36.44	30.58	46.46	30.17	46.92	36.49	40.56	22.87
k, delay calibration	0.11	0.37	0.11	0.11	0.17	0.11	0.44	0.15	0.24
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.56	20.65	0.63	8.53	1.57	8.92	32.61	10.08	1.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.93	0.42	0.78	0.59	0.77	0.98	0.88	0.51
d, Delay for Lane Group [s/veh]	59.96	57.08	31.22	54.99	31.74	55.84	69.10	50.64	24.11
Lane Group LOS	E	E	C	D	C	E	E	D	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.07	14.58	3.80	3.29	7.06	2.97	17.44	8.45	6.66
50th-Percentile Queue Length [ft/ln]	51.77	364.43	94.90	82.16	176.39	74.34	435.98	211.26	166.51
95th-Percentile Queue Length [veh/ln]	3.73	20.84	6.83	5.92	11.41	5.35	24.29	13.22	10.89
95th-Percentile Queue Length [ft/ln]	93.19	520.97	170.83	147.88	285.29	133.82	607.19	330.45	272.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.96	57.08	31.22	54.99	31.74	31.74	55.84	69.10	69.10	50.64	24.11	24.11
Movement LOS	E	E	C	D	C	C	E	E	E	D	C	C
d_A, Approach Delay [s/veh]	50.89			37.84			66.87			36.28		
Approach LOS	D			D			E			D		
d_I, Intersection Delay [s/veh]	48.62											
Intersection LOS	D											
Intersection V/C	0.883											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	43.05	43.05	43.05	43.05
l_p,int, Pedestrian LOS Score for Intersection	2.481	2.331	2.261	2.405
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	890	890	987	1355
d_b, Bicycle Delay [s]	15.90	15.90	13.25	5.37
l_b,int, Bicycle LOS Score for Intersection	2.774	2.296	2.588	2.660
Bicycle LOS	C	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 39: Denton Street and Riggin Avenue

Control Type:	Signalized	Delay (sec / veh):	48.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.150

Intersection Setup

Name	Denton Street			Denton Street			Riggin Avenue			Riggin Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Riggin Avenue			Riggin Avenue		
Base Volume Input [veh/h]	9	0	7	16	0	0	0	607	15	14	373	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	490	0	10	19	54	0	0	311	187
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	0	7	506	0	10	19	661	15	14	684	187
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	2	127	0	3	5	165	4	4	171	47
Total Analysis Volume [veh/h]	9	0	7	506	0	10	19	661	15	14	684	187
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	31	0	0	31	0	94	59	0	0	59	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	20.0	0.0	0.0	20.0	0.0	20.0	20.0	0.0	0.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	L	C
C, Cycle Length [s]	68	68	68	68	68	68	68
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	30	30	30	30	30	30	30
g / C, Green / Cycle	0.44	0.44	0.44	0.44	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.16	0.46	0.01	0.03	0.36	0.02	0.48
s, saturation flow rate [veh/h]	103	1093	1589	636	1863	763	1802
c, Capacity [veh/h]	128	586	699	137	824	220	797
d1, Uniform Delay [s]	16.59	20.20	10.72	31.61	16.54	24.99	18.90
k, delay calibration	0.11	0.49	0.11	0.11	0.32	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.43	15.06	0.01	0.45	5.92	0.12	60.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.12	0.86	0.01	0.14	0.82	0.06	1.09
d, Delay for Lane Group [s/veh]	17.02	35.26	10.72	32.06	22.46	25.11	79.01
Lane Group LOS	B	D	B	C	C	C	F
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.14	9.92	0.08	0.31	9.47	0.20	24.24
50th-Percentile Queue Length [ft/ln]	3.53	247.93	1.97	7.81	236.65	4.88	606.05
95th-Percentile Queue Length [veh/ln]	0.25	15.08	0.14	0.56	14.51	0.35	34.43
95th-Percentile Queue Length [ft/ln]	6.35	377.05	3.54	14.05	362.79	8.78	860.76

Movement, Approach, & Intersection Results

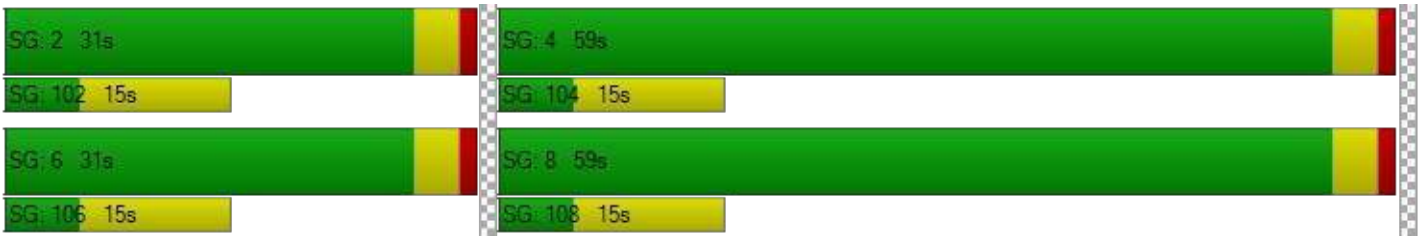
d_M, Delay for Movement [s/veh]	17.02	17.02	17.02	35.26	35.26	10.72	32.06	22.46	22.46	25.11	79.01	79.01
Movement LOS	B	B	B	D	D	B	C	C	C	C	E	E
d_A, Approach Delay [s/veh]	17.02			34.78			22.72			78.16		
Approach LOS	B			C			C			E		
d_I, Intersection Delay [s/veh]	48.86											
Intersection LOS	D											
Intersection V/C	1.150											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	25.55	25.55	25.55	25.55
l_p,int, Pedestrian LOS Score for Intersection	1.744	2.189	2.395	3.316
Crosswalk LOS	A	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	795	795	1620	1620
d_b, Bicycle Delay [s]	12.32	12.32	1.23	1.23
l_b,int, Bicycle LOS Score for Intersection	1.586	2.411	2.706	3.020
Bicycle LOS	A	B	B	C

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 66: Shirk Street and South Commercial Driveway (Site Access B)

Control Type:	Two-way stop	Delay (sec / veh):	12.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name	Shirk Street		Shirk Street		South Commercial Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Shirk Street		Shirk Street		South Commercial Driveway	
Base Volume Input [veh/h]	247	0	0	308	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	271	189	0	172	0	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	518	189	0	480	0	5
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	130	47	0	120	0	1
Total Analysis Volume [veh/h]	518	189	0	480	0	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	12.38
Movement LOS	A	A		A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.77
d_A, Approach Delay [s/veh]	0.00		0.00		12.38	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.05					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 67: East Commercial Driveway and Riggin Avenue (SIte Access D)

Control Type:	Two-way stop	Delay (sec / veh):	14.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.239

Intersection Setup

Name	East Commercial Driveway		Riggin Avenue		Riggin Avenue	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	East Commercial Driveway		Riggin Avenue		Riggin Avenue	
Base Volume Input [veh/h]	0	0	0	539	369	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	117	0	73	177	143
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	117	0	612	546	143
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	29	0	153	137	36
Total Analysis Volume [veh/h]	0	117	0	612	546	143
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.24	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	14.65	0.00	0.00	0.00	0.00
Movement LOS		B		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.92	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	23.09	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.65		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.21					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 78: West Commercial Driveway and Riggin Avenue (Site Access C)

Control Type:	Two-way stop	Delay (sec / veh):	15.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.313

Intersection Setup

Name	West Commercial Driveway		Riggin Avenue		Riggin Avenue	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	West Commercial Driveway		Riggin Avenue		Riggin Avenue	
Base Volume Input [veh/h]	0	0	0	596	311	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	163	0	73	226	68
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	163	0	669	537	68
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	41	0	167	134	17
Total Analysis Volume [veh/h]	0	163	0	669	537	68
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.31	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	15.04	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	1.33	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	33.23	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.04		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.71					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 79: Shirk Street and North Commercial Driveway (Site Access A)

Control Type:	Two-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name	Shirk Street		Shirk Street		North Commercial Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Shirk Street		Shirk Street		North Commercial Driveway	
Base Volume Input [veh/h]	191	0	0	284	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	62	0	18	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	203	62	0	302	0	6
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	16	0	76	0	2
Total Analysis Volume [veh/h]	203	62	0	302	0	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.77	0.00	0.00	9.51
Movement LOS	A	A	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.02
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.56
d_A, Approach Delay [s/veh]	0.00		0.00		9.51	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.10					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 80: Shirk Street and Central Access Driveway (Site Access F)

Control Type:	Signalized	Delay (sec / veh):	8.3
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.444

Intersection Setup

Name	Shirk Street		Shirk Street		Central Access Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	Shirk Street		Shirk Street		Central Access Driveway	
Base Volume Input [veh/h]	247	0	0	284	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	69	208	18	0	172	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	316	208	18	284	172	5
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	52	5	71	43	1
Total Analysis Volume [veh/h]	316	208	18	284	172	5
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	10	0	0	10	5	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	14	0	0	14	46	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C
C, Cycle Length [s]	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00
g_i, Effective Green Time [s]	44	44	8
g / C, Green / Cycle	0.74	0.74	0.13
(v / s)_i Volume / Saturation Flow Rate	0.30	0.17	0.10
s, saturation flow rate [veh/h]	1748	1808	1775
c, Capacity [veh/h]	1286	1394	233
d1, Uniform Delay [s]	2.99	2.50	25.19
k, delay calibration	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00
d2, Incremental Delay [s]	0.96	0.36	5.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.41	0.22	0.76
d, Delay for Lane Group [s/veh]	3.95	2.86	30.27
Lane Group LOS	A	A	C
Critical Lane Group	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	1.47	0.68	2.61
50th-Percentile Queue Length [ft/ln]	36.79	17.03	65.33
95th-Percentile Queue Length [veh/ln]	2.65	1.23	4.70
95th-Percentile Queue Length [ft/ln]	66.21	30.66	117.59

Movement, Approach, & Intersection Results

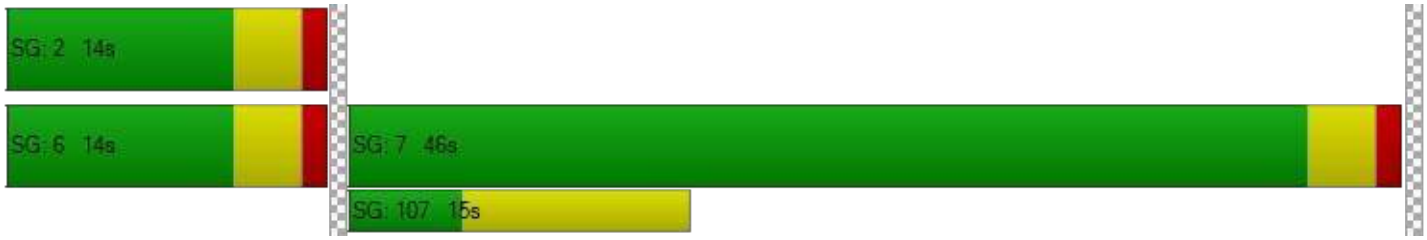
d_M, Delay for Movement [s/veh]	3.95	3.95	2.86	2.86	30.27	30.27
Movement LOS	A	A	A	A	C	C
d_A, Approach Delay [s/veh]	3.95		2.86		30.27	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	8.27					
Intersection LOS	A					
Intersection V/C	0.444					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.69	21.69	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.173	1.999	0.000
Crosswalk LOS	B	A	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	333	1399
d_b, Bicycle Delay [s]	20.85	20.85	2.71
I_b,int, Bicycle LOS Score for Intersection	2.424	2.058	1.852
Bicycle LOS	B	B	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 81: Denton Street and Site Access E

Control Type:	Two-way stop	Delay (sec / veh):	16.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Denton Street			Denton Street			Site Access E			Site Access E		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Site Access E			Site Access E		
Base Volume Input [veh/h]	0	19	0	0	16	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	206	0	0	0	0	1	2	0	499	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	206	19	0	0	16	1	2	0	499	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	5	0	0	4	0	1	0	125	0	0	0
Total Analysis Volume [veh/h]	206	19	0	0	16	1	2	0	499	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.53	0.00	0.00	7.25	0.00	0.00	15.97	16.21	11.42	26.95	13.18	8.40
Movement LOS	A	A	A	A	A	A	C	C	B	D	B	A
95th-Percentile Queue Length [veh/ln]	0.40	0.40	0.40	0.00	0.00	0.00	2.61	2.61	2.61	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	10.12	10.12	10.12	0.00	0.00	0.00	65.15	65.15	65.15	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	6.90			0.00			11.44			16.18		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	9.80											
Intersection LOS	C											

Visalia Costco

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Report File: H:\...\P1_SAT.pdf

Scenario 2 Phase 1 SAT
5/4/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
26	Shirk Street and Sedona Avenue	Two-way stop	HCM 7th Edition	WB Right	0.020	8.9	A
27	Denton Street and Sedona Avenue	Roundabout	HCM 7th Edition	SB Thru		2.9	A
38	Shirk Street and Riggin Avenue	Signalized	HCM 7th Edition	NB Thru	0.870	43.4	D
39	Denton Street and Riggin Avenue	Two-way stop	HCM 7th Edition	SB Left	3.143	1,006.7	F
66	Shirk Street and South Commercial Driveway (Site Access B)	Two-way stop	HCM 7th Edition	WB Right	0.027	12.7	B
67	East Commercial Driveway and Riggin Avenue (SIte Access D)	Two-way stop	HCM 7th Edition	SB Right	0.424	14.8	B
78	West Commercial Driveway and Riggin Avenue (Site Access C)	Two-way stop	HCM 7th Edition	SB Right	0.466	16.6	C
79	Shirk Street and North Commercial Driveway (Site Access A)	Two-way stop	HCM 7th Edition	WB Right	0.019	10.5	B
81	Denton Street and Site Access E	Two-way stop	HCM 7th Edition	EB Left	0.010	24.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 26: Shirk Street and Sedona Avenue

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name	Shirk Street			Shirk Street			Sedona Avenue			Sedona Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Shirk Street			Shirk Street			Sedona Avenue			Sedona Avenue		
Base Volume Input [veh/h]	10	30	96	16	28	3	3	31	0	275	32	16
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	25	0	0	29	0	0	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	55	96	16	57	3	3	31	0	275	32	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	14	24	4	14	1	1	8	0	69	8	5
Total Analysis Volume [veh/h]	10	55	96	16	57	3	3	31	0	275	32	19
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
d_M, Delay for Movement [s/veh]	7.35	0.00	0.00	7.54	0.00	0.00	0.00	0.00	8.57	0.00	0.00	8.86
Movement LOS	A	A	A	A	A	A			A			A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.06
95th-Percentile Queue Length [ft/ln]	0.47	0.47	0.47	0.68	0.68	0.68	0.00	0.00	0.00	0.00	0.00	1.53
d_A, Approach Delay [s/veh]	0.46			1.59			8.57			8.86		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	1.42											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 27: Denton Street and Sedona Avenue

Control Type:	Roundabout	Delay (sec / veh):	2.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Denton Street			Denton Street			Sedona Avenue			Sedona Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Sedona Avenue			Sedona Avenue		
Base Volume Input [veh/h]	0	20	0	3	19	17	17	2	0	0	1	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	20	0	3	19	17	17	2	0	0	1	3
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	5	0	1	5	4	4	1	0	0	0	1
Total Analysis Volume [veh/h]	3	20	0	3	19	17	17	2	0	0	1	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	22			4			22			41		
Exiting Flow Rate [veh/h]	19			41			21			5		
Demand Flow Rate [veh/h]	3	20	0	3	19	17	17	2	0	0	1	3
Adjusted Demand Flow Rate [veh/h]	3	20	0	3	19	17	17	2	0	0	1	3

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	24	40	20	5
Capacity of Entry and Bypass Lanes [veh/h]	1349	1375	1349	1324
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1323	1348	1323	1298
X, volume / capacity	0.02	0.03	0.01	0.00

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.05	0.09	0.04	0.01
95th-Percentile Queue Length [ft]	1.33	2.23	1.09	0.23
Approach Delay [s/veh]	2.86	2.90	2.83	2.80
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	2.87			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 38: Shirk Street and Riggin Avenue

Control Type:	Signalized	Delay (sec / veh):	43.4
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.870

Intersection Setup

Name	Shirk Street			Shirk Street			Riggin Avenue			Riggin Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Shirk Street			Shirk Street			Riggin Avenue			Riggin Avenue		
Base Volume Input [veh/h]	83	180	62	37	212	24	24	134	62	117	223	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	413	8	0	0	0	116	2	0	426	120	14
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	83	593	70	37	212	24	140	136	62	543	343	63
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	148	18	9	53	6	35	34	16	136	86	16
Total Analysis Volume [veh/h]	83	593	70	37	212	24	140	136	62	543	343	63
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	34	0	9	34	0	11	19	0	13	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	30	30	3	27	9	12	29	32
g / C, Green / Cycle	0.06	0.33	0.33	0.03	0.30	0.10	0.14	0.32	0.36
(v / s)_i Volume / Saturation Flow Rate	0.05	0.32	0.04	0.02	0.13	0.08	0.11	0.30	0.22
s, saturation flow rate [veh/h]	1781	1870	1589	1781	1837	1781	1772	1781	1820
c, Capacity [veh/h]	110	620	527	61	559	178	240	573	650
d1, Uniform Delay [s]	41.68	29.51	21.08	43.00	25.07	39.69	37.97	29.88	23.99
k, delay calibration	0.11	0.42	0.11	0.11	0.11	0.11	0.11	0.39	0.21
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.10	23.86	0.11	9.55	0.51	7.56	7.02	22.72	1.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.96	0.13	0.61	0.42	0.79	0.83	0.95	0.62
d, Delay for Lane Group [s/veh]	51.78	53.37	21.19	52.54	25.58	47.25	45.00	52.60	25.90
Lane Group LOS	D	D	C	D	C	D	D	D	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.11	16.16	1.03	0.97	4.03	3.37	4.66	14.65	7.26
50th-Percentile Queue Length [ft/ln]	52.67	404.06	25.82	24.19	100.63	84.17	116.51	366.27	181.44
95th-Percentile Queue Length [veh/ln]	3.79	22.76	1.86	1.74	7.25	6.06	8.20	20.93	11.68
95th-Percentile Queue Length [ft/ln]	94.80	568.89	46.48	43.54	181.13	151.50	205.02	523.20	291.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.78	53.37	21.19	52.54	25.58	25.58	47.25	45.00	45.00	52.60	25.90	25.90
Movement LOS	D	D	C	D	C	C	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	50.17			29.23			45.93			41.18		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	43.37											
Intersection LOS	D											
Intersection V/C	0.870											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.61	36.61	36.61	36.61
l_p,int, Pedestrian LOS Score for Intersection	2.514	2.289	2.198	2.329
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	664	664	332	376
d_b, Bicycle Delay [s]	20.14	20.14	31.40	29.76
l_b,int, Bicycle LOS Score for Intersection	2.791	2.010	2.117	3.125
Bicycle LOS	C	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 39: Denton Street and Riggin Avenue

Control Type:	Two-way stop	Delay (sec / veh):	1,006.7
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	3.143

Intersection Setup

Name	Denton Street			Denton Street			Riggin Avenue			Riggin Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Riggin Avenue			Riggin Avenue		
Base Volume Input [veh/h]	5	0	3	19	0	0	0	197	13	10	150	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	717	0	11	11	0	0	0	401	303
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	0	3	736	0	11	11	197	13	10	551	303
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	1	184	0	3	3	49	3	3	138	76
Total Analysis Volume [veh/h]	5	0	3	736	0	11	11	197	13	10	551	303
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No			
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	3.14	0.00	0.03	0.01	0.00	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	21.11	22.62	9.60	1006.69	1005.55	13.43	9.65	0.00	0.00	7.67	0.00	0.00
Movement LOS	C	C	A	F	F	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.08	66.86	66.86	0.08	0.04	0.00	0.00	0.02	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.96	1.96	1.96	1671.38	1671.38	1.93	1.06	0.00	0.00	0.56	0.00	0.00
d_A, Approach Delay [s/veh]	16.80			992.06			0.48			0.09		
Approach LOS	C			F			A			A		
d_I, Intersection Delay [s/veh]	402.93											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 66: Shirk Street and South Commercial Driveway (Site Access B)

Control Type:	Two-way stop	Delay (sec / veh):	12.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.027

Intersection Setup

Name	Shirk Street		Shirk Street		South Commercial Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Shirk Street		Shirk Street		South Commercial Driveway	
Base Volume Input [veh/h]	227	0	0	303	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	271	271	0	0	0	13
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	498	271	0	303	0	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	68	0	76	0	3
Total Analysis Volume [veh/h]	498	271	0	303	0	13
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	12.72
Movement LOS	A	A		A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.08
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	2.09
d_A, Approach Delay [s/veh]	0.00		0.00		12.72	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.15					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 67: East Commercial Driveway and Riggin Avenue (Site Access D)

Control Type:	Two-way stop	Delay (sec / veh):	14.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.424

Intersection Setup

Name	East Commercial Driveway		Riggin Avenue		Riggin Avenue	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	East Commercial Driveway		Riggin Avenue		Riggin Avenue	
Base Volume Input [veh/h]	0	0	0	217	149	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	268	0	11	131	282
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	268	0	228	280	282
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	67	0	57	70	71
Total Analysis Volume [veh/h]	0	268	0	228	280	282
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.42	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	14.81	0.00	0.00	0.00	0.00
Movement LOS		B		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	2.11	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	52.71	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.81		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	3.75					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 78: West Commercial Driveway and Riggin Avenue (Site Access C)

Control Type:	Two-way stop	Delay (sec / veh):	16.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.466

Intersection Setup

Name	West Commercial Driveway		Riggin Avenue		Riggin Avenue	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	West Commercial Driveway		Riggin Avenue		Riggin Avenue	
Base Volume Input [veh/h]	0	0	0	217	149	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	268	0	11	293	106
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	268	0	228	442	106
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	67	0	57	111	27
Total Analysis Volume [veh/h]	0	268	0	228	442	106
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.47	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	16.63	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	2.46	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	61.61	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	16.63		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	4.27					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 79: Shirk Street and North Commercial Driveway (Site Access A)

Control Type:	Two-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name	Shirk Street		Shirk Street		North Commercial Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Shirk Street		Shirk Street		North Commercial Driveway	
Base Volume Input [veh/h]	227	0	0	314	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	13	271	29	0	0	13
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	240	271	29	314	0	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	68	7	79	0	3
Total Analysis Volume [veh/h]	240	271	29	314	0	13
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.00	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	8.45	0.00	0.00	10.47
Movement LOS	A	A	A	A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.05	0.05	0.00	0.06
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.23	1.23	0.00	1.48
d_A, Approach Delay [s/veh]	0.00		0.71		10.47	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.44					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 81: Denton Street and Site Access E

Control Type:	Two-way stop	Delay (sec / veh):	24.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name	Denton Street			Denton Street			Site Access E			Site Access E		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Site Access E			Site Access E		
Base Volume Input [veh/h]	0	20	0	0	19	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	314	0	0	0	0	0	3	0	728	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	314	20	0	0	19	0	3	0	728	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	5	0	0	5	0	1	0	182	0	0	0
Total Analysis Volume [veh/h]	314	20	0	0	19	0	3	0	728	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.20	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.69	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.75	0.00	0.00	7.26	0.00	0.00	24.57	24.34	15.90	72.99	16.84	8.40
Movement LOS	A	A	A	A	A	A	C	C	C	F	C	A
95th-Percentile Queue Length [veh/ln]	0.69	0.69	0.69	0.00	0.00	0.00	6.00	6.00	6.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	17.17	17.17	17.17	0.00	0.00	0.00	150.11	150.11	150.11	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	7.28			0.00			15.94			32.74		
Approach LOS	A			A			C			D		
d_I, Intersection Delay [s/veh]	12.99											
Intersection LOS	C											

Visalia Costco

Vistro File: H:\...\Visalia Costco_20230503.vistro
Report File: H:\...\P1_SAT_Alt.pdf

Scenario 6 Phase 1 SAT_Alt
5/4/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
26	Shirk Street and Sedona Avenue	Two-way stop	HCM 7th Edition	WB Right	0.020	8.9	A
27	Denton Street and Sedona Avenue	Roundabout	HCM 7th Edition	SB Thru		2.9	A
38	Shirk Street and Riggin Avenue	Signalized	HCM 7th Edition	NB Left	0.849	42.3	D
39	Denton Street and Riggin Avenue	Signalized	HCM 7th Edition	WB Thru	1.162	52.9	D
66	Shirk Street and South Commercial Driveway (Site Access B)	Two-way stop	HCM 7th Edition	WB Right	0.019	13.9	B
67	East Commercial Driveway and Riggin Avenue (SIte Access D)	Two-way stop	HCM 7th Edition	SB Right	0.284	13.8	B
78	West Commercial Driveway and Riggin Avenue (Site Access C)	Two-way stop	HCM 7th Edition	SB Right	0.394	15.5	C
79	Shirk Street and North Commercial Driveway (Site Access A)	Two-way stop	HCM 7th Edition	WB Right	0.012	9.8	A
80	Shirk Street and Central Access Driveway (Site Access F)	Signalized	HCM 7th Edition	WB Left	0.544	9.6	A
81	Denton Street and Site Access E	Two-way stop	HCM 7th Edition	EB Left	0.009	21.8	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 26: Shirk Street and Sedona Avenue

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name	Shirk Street			Shirk Street			Sedona Avenue			Sedona Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Shirk Street			Shirk Street			Sedona Avenue			Sedona Avenue		
Base Volume Input [veh/h]	10	30	96	16	28	3	3	31	0	275	32	16
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	25	0	1	28	0	0	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	55	96	17	56	3	3	31	0	275	32	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	14	24	4	14	1	1	8	0	69	8	5
Total Analysis Volume [veh/h]	10	55	96	17	56	3	3	31	0	275	32	19
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
d_M, Delay for Movement [s/veh]	7.34	0.00	0.00	7.54	0.00	0.00	0.00	0.00	8.57	0.00	0.00	8.86
Movement LOS	A	A	A	A	A	A			A			A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.06
95th-Percentile Queue Length [ft/ln]	0.47	0.47	0.47	0.72	0.72	0.72	0.00	0.00	0.00	0.00	0.00	1.53
d_A, Approach Delay [s/veh]	0.46			1.69			8.57			8.86		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	1.44											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 27: Denton Street and Sedona Avenue

Control Type:	Roundabout	Delay (sec / veh):	2.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Denton Street			Denton Street			Sedona Avenue			Sedona Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Sedona Avenue			Sedona Avenue		
Base Volume Input [veh/h]	0	20	0	3	19	17	17	2	0	0	1	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	0	0	0	1	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	20	0	3	19	17	17	2	1	0	1	3
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	5	0	1	5	4	4	1	0	0	0	1
Total Analysis Volume [veh/h]	3	20	0	3	19	17	17	2	1	0	1	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	22			4			22			41		
Exiting Flow Rate [veh/h]	20			41			21			5		
Demand Flow Rate [veh/h]	3	20	0	3	19	17	17	2	1	0	1	3
Adjusted Demand Flow Rate [veh/h]	3	20	0	3	19	17	17	2	1	0	1	3

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	24	40	21	5
Capacity of Entry and Bypass Lanes [veh/h]	1349	1375	1349	1324
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1323	1348	1323	1298
X, volume / capacity	0.02	0.03	0.02	0.00

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.05	0.09	0.05	0.01
95th-Percentile Queue Length [ft]	1.33	2.23	1.15	0.23
Approach Delay [s/veh]	2.86	2.90	2.84	2.80
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	2.87			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 38: Shirk Street and Riggin Avenue

Control Type:	Signalized	Delay (sec / veh):	42.3
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.849

Intersection Setup

Name	Shirk Street			Shirk Street			Riggin Avenue			Riggin Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Shirk Street			Shirk Street			Riggin Avenue			Riggin Avenue		
Base Volume Input [veh/h]	83	180	62	37	212	24	24	134	62	117	223	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	400	21	72	117	35	112	6	0	309	85	143
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	83	580	83	109	329	59	136	140	62	426	308	192
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	145	21	27	82	15	34	35	16	107	77	48
Total Analysis Volume [veh/h]	83	580	83	109	329	59	136	140	62	426	308	192
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	29	0	9	29	0	15	19	0	23	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C
C, Cycle Length [s]	88	88	88	88	88	88	88	88	88
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	29	29	7	31	9	12	23	27
g / C, Green / Cycle	0.06	0.33	0.33	0.08	0.35	0.10	0.14	0.27	0.31
(v / s)_i Volume / Saturation Flow Rate	0.05	0.31	0.05	0.06	0.21	0.08	0.11	0.24	0.29
s, saturation flow rate [veh/h]	1781	1870	1589	1781	1821	1781	1774	1781	1751
c, Capacity [veh/h]	110	618	526	143	636	175	251	473	541
d1, Uniform Delay [s]	40.59	28.56	20.79	39.62	23.68	38.72	36.59	31.18	29.41
k, delay calibration	0.11	0.38	0.11	0.11	0.18	0.11	0.11	0.23	0.33
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.80	19.79	0.14	8.07	1.54	7.23	6.01	12.46	17.75
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.94	0.16	0.76	0.61	0.78	0.81	0.90	0.92
d, Delay for Lane Group [s/veh]	50.39	48.36	20.93	47.69	25.22	45.95	42.60	43.64	47.16
Lane Group LOS	D	D	C	D	C	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.04	14.69	1.20	2.59	6.67	3.16	4.53	10.04	12.44
50th-Percentile Queue Length [ft/ln]	50.98	367.19	29.90	64.69	166.77	79.05	113.26	251.09	310.91
95th-Percentile Queue Length [veh/ln]	3.67	20.97	2.15	4.66	10.91	5.69	8.02	15.24	18.22
95th-Percentile Queue Length [ft/ln]	91.76	524.33	53.82	116.45	272.66	142.30	200.52	381.02	455.50

Movement, Approach, & Intersection Results

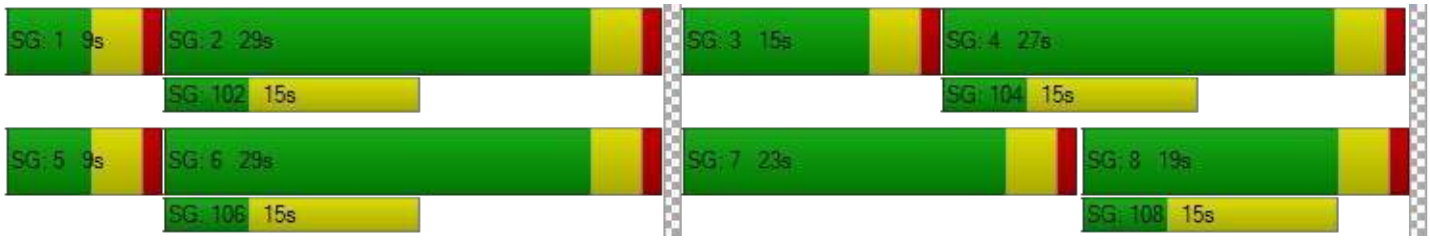
d_M, Delay for Movement [s/veh]	50.39	48.36	20.93	47.69	25.22	25.22	45.95	42.60	42.60	43.64	47.16	47.16
Movement LOS	D	D	C	D	C	C	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	45.53			30.15			43.95			45.54		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	42.27											
Intersection LOS	D											
Intersection V/C	0.849											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	35.32	35.32	35.32	35.32
l_p,int, Pedestrian LOS Score for Intersection	2.512	2.397	2.197	2.349
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	570	570	342	524
d_b, Bicycle Delay [s]	22.42	22.42	30.14	23.87
l_b,int, Bicycle LOS Score for Intersection	2.791	2.380	2.117	3.088
Bicycle LOS	C	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 39: Denton Street and Riggin Avenue

Control Type:	Signalized	Delay (sec / veh):	52.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.162

Intersection Setup

Name	Denton Street			Denton Street			Riggin Avenue			Riggin Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Riggin Avenue			Riggin Avenue		
Base Volume Input [veh/h]	5	0	3	19	0	0	0	197	13	10	150	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	645	0	14	27	72	0	0	440	264
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	0	3	664	0	14	27	269	13	10	590	264
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	1	166	0	4	7	67	3	3	148	66
Total Analysis Volume [veh/h]	5	0	3	664	0	14	27	269	13	10	590	264
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	67	0	0	67	0	0	33	0	0	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	20.0	0.0	0.0	20.0	0.0	0.0	20.0	0.0	0.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	L	C
C, Cycle Length [s]	68	68	68	68	68	68	68
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	30	30	30	30	30	30	30
g / C, Green / Cycle	0.44	0.44	0.44	0.44	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.02	0.48	0.01	0.04	0.15	0.01	0.48
s, saturation flow rate [veh/h]	493	1398	1589	646	1855	1097	1773
c, Capacity [veh/h]	304	723	701	106	818	398	782
d1, Uniform Delay [s]	13.66	20.19	10.71	34.00	12.52	18.49	19.00
k, delay calibration	0.11	0.50	0.11	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.03	18.68	0.01	1.25	0.25	0.03	60.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.03	0.92	0.02	0.26	0.34	0.03	1.09
d, Delay for Lane Group [s/veh]	13.70	38.86	10.72	35.25	12.77	18.52	79.06
Lane Group LOS	B	D	B	D	B	B	F
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.06	13.47	0.11	0.47	2.61	0.11	23.79
50th-Percentile Queue Length [ft/ln]	1.61	336.76	2.76	11.72	65.20	2.84	594.75
95th-Percentile Queue Length [veh/ln]	0.12	19.49	0.20	0.84	4.69	0.20	33.84
95th-Percentile Queue Length [ft/ln]	2.91	487.24	4.97	21.10	117.36	5.11	846.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.70	13.70	13.70	38.86	38.86	10.72	35.25	12.77	12.77	18.52	79.06	79.06
Movement LOS	B	B	B	D	D	B	D	B	B	B	E	E
d_A, Approach Delay [s/veh]	13.70			38.28			14.74			78.35		
Approach LOS	B			D			B			E		
d_I, Intersection Delay [s/veh]	52.89											
Intersection LOS	D											
Intersection V/C	1.162											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	25.60	25.60	25.60	25.60
l_p,int, Pedestrian LOS Score for Intersection	1.732	2.281	2.233	3.502
Crosswalk LOS	A	B	B	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1853	1853	853	853
d_b, Bicycle Delay [s]	0.18	0.18	11.18	11.18
l_b,int, Bicycle LOS Score for Intersection	1.573	2.678	2.069	2.985
Bicycle LOS	A	B	B	C

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 66: Shirk Street and South Commercial Driveway (Site Access B)

Control Type:	Two-way stop	Delay (sec / veh):	13.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name	Shirk Street		Shirk Street		South Commercial Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Shirk Street		Shirk Street		South Commercial Driveway	
Base Volume Input [veh/h]	227	0	0	303	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	385	270	0	224	0	8
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	612	270	0	527	0	8
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	153	68	0	132	0	2
Total Analysis Volume [veh/h]	612	270	0	527	0	8
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	13.89
Movement LOS	A	A		A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.06
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	1.48
d_A, Approach Delay [s/veh]	0.00		0.00		13.89	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.08					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 67: East Commercial Driveway and Riggin Avenue (SIte Access D)

Control Type:	Two-way stop	Delay (sec / veh):	13.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.284

Intersection Setup

Name	East Commercial Driveway		Riggin Avenue		Riggin Avenue	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	East Commercial Driveway		Riggin Avenue		Riggin Avenue	
Base Volume Input [veh/h]	0	0	0	217	149	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	162	0	99	251	202
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	162	0	316	400	202
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	41	0	79	100	51
Total Analysis Volume [veh/h]	0	162	0	316	400	202
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.28	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	13.80	0.00	0.00	0.00	0.00
Movement LOS		B		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	1.16	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	29.11	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.80		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	2.07					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 78: West Commercial Driveway and Riggin Avenue (Site Access C)

Control Type:	Two-way stop	Delay (sec / veh):	15.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.394

Intersection Setup

Name	West Commercial Driveway		Riggin Avenue		Riggin Avenue	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	West Commercial Driveway		Riggin Avenue		Riggin Avenue	
Base Volume Input [veh/h]	0	0	0	217	149	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	221	0	99	316	97
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	221	0	316	465	97
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	55	0	79	116	24
Total Analysis Volume [veh/h]	0	221	0	316	465	97
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.39	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	15.53	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	1.87	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	46.72	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.53		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	3.12					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 79: Shirk Street and North Commercial Driveway (Site Access A)

Control Type:	Two-way stop	Delay (sec / veh):	9.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

Intersection Setup

Name	Shirk Street		Shirk Street		North Commercial Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Shirk Street		Shirk Street		North Commercial Driveway	
Base Volume Input [veh/h]	227	0	0	314	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	88	0	28	0	9
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	243	88	0	342	0	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	22	0	86	0	2
Total Analysis Volume [veh/h]	243	88	0	342	0	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.93	0.00	0.00	9.84
Movement LOS	A	A	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.91
d_A, Approach Delay [s/veh]	0.00		0.00		9.84	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.13					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 80: Shirk Street and Central Access Driveway (Site Access F)

Control Type:	Signalized	Delay (sec / veh):	9.6
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.544

Intersection Setup

Name	Shirk Street		Shirk Street		Central Access Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Shirk Street		Shirk Street		Central Access Driveway	
Base Volume Input [veh/h]	227	0	0	314	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	97	296	28	0	224	7
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	324	296	28	314	224	7
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	81	74	7	79	56	2
Total Analysis Volume [veh/h]	324	296	28	314	224	7
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	10	0	0	10	5	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	16	0	0	16	44	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	7	0	0	10	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C
C, Cycle Length [s]	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00
g_i, Effective Green Time [s]	42	42	10
g / C, Green / Cycle	0.70	0.70	0.17
(v / s)_i Volume / Saturation Flow Rate	0.36	0.20	0.13
s, saturation flow rate [veh/h]	1725	1751	1774
c, Capacity [veh/h]	1208	1291	296
d1, Uniform Delay [s]	4.21	3.30	24.01
k, delay calibration	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00
d2, Incremental Delay [s]	1.56	0.50	4.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.51	0.26	0.78
d, Delay for Lane Group [s/veh]	5.77	3.81	28.52
Lane Group LOS	A	A	C
Critical Lane Group	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.55	1.06	3.30
50th-Percentile Queue Length [ft/ln]	63.72	26.39	82.58
95th-Percentile Queue Length [veh/ln]	4.59	1.90	5.95
95th-Percentile Queue Length [ft/ln]	114.70	47.51	148.65

Movement, Approach, & Intersection Results

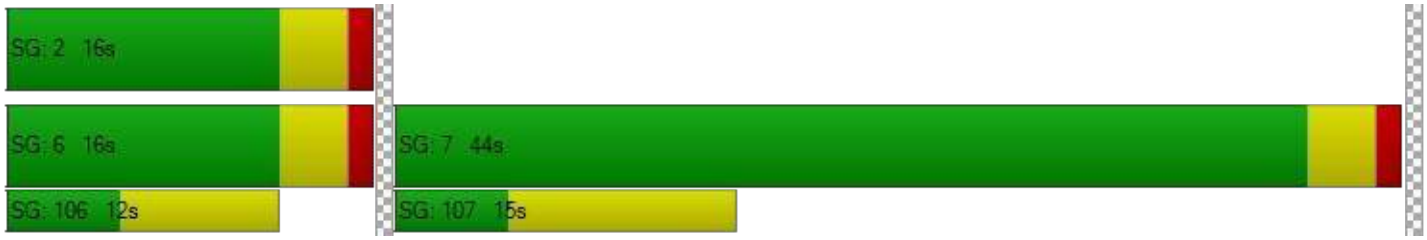
d_M, Delay for Movement [s/veh]	5.77	5.77	3.81	3.81	28.52	28.52
Movement LOS	A	A	A	A	C	C
d_A, Approach Delay [s/veh]	5.77		3.81		28.52	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	9.61					
Intersection LOS	A					
Intersection V/C	0.544					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.71	21.71	21.71
l_p,int, Pedestrian LOS Score for Intersection	2.260	2.024	2.006
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	400	1332
d_b, Bicycle Delay [s]	19.23	19.23	3.35
l_b,int, Bicycle LOS Score for Intersection	2.583	2.124	1.941
Bicycle LOS	B	B	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 81: Denton Street and Site Access E

Control Type:	Two-way stop	Delay (sec / veh):	21.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name	Denton Street			Denton Street			Site Access E			Site Access E		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Site Access E			Site Access E		
Base Volume Input [veh/h]	0	20	0	0	19	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	291	0	0	0	0	1	3	0	659	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	291	20	0	0	19	1	3	0	659	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	73	5	0	0	5	0	1	0	165	0	0	0
Total Analysis Volume [veh/h]	291	20	0	0	19	1	3	0	659	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.18	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.62	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.70	0.00	0.00	7.26	0.00	0.00	21.75	21.65	14.10	53.81	15.96	8.40
Movement LOS	A	A	A	A	A	A	C	C	B	F	C	A
95th-Percentile Queue Length [veh/ln]	0.62	0.62	0.62	0.00	0.00	0.00	4.69	4.69	4.69	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	15.58	15.58	15.58	0.00	0.00	0.00	117.28	117.28	117.28	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	7.20			0.00			14.13			26.06		
Approach LOS	A			A			B			D		
d_I, Intersection Delay [s/veh]	11.68											
Intersection LOS	C											

Appendix E – Phase III Vistro 2022 Output

Visalia Costco

Vistro File: H:\...\Visalia Costco_20230503.vistro
Report File: H:\...\P3_PM.pdf

Scenario 3 Phase 3 PM
5/4/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
26	Shirk Street and Sedona Avenue	Two-way stop	HCM 7th Edition	WB Right	0.026	9.7	A
27	Denton Street and Sedona Avenue	Roundabout	HCM 7th Edition	SB Thru		2.9	A
38	Shirk Street and Riggin Avenue	Signalized	HCM 7th Edition	EB Right	1.095	105.8	F
39	Denton Street and Riggin Avenue	Signalized	HCM 7th Edition	SB Left	1.137	50.4	D
66	Shirk Street and South Commercial Driveway (Site Access B)	Two-way stop	HCM 7th Edition	WB Right	0.021	13.4	B
67	East Commercial Driveway and Riggin Avenue (SIte Access D)	Two-way stop	HCM 7th Edition	SB Right	0.381	16.1	C
78	West Commercial Driveway and Riggin Avenue (Site Access C)	Two-way stop	HCM 7th Edition	SB Right	0.365	15.3	C
79	Shirk Street and North Commercial Driveway (Site Access A)	Two-way stop	HCM 7th Edition	WB Right	0.015	11.1	B
81	Denton Street and Site Access E	Two-way stop	HCM 7th Edition	EB Left	0.005	17.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 26: Shirk Street and Sedona Avenue

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.026

Intersection Setup

Name	Shirk Street			Shirk Street			Sedona Avenue			Sedona Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Shirk Street			Shirk Street			Sedona Avenue			Sedona Avenue		
Base Volume Input [veh/h]	27	143	197	18	109	17	37	37	76	300	37	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	18	0	0	19	0	0	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	27	161	197	18	128	17	37	37	76	300	37	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	40	49	5	32	4	9	9	19	75	9	5
Total Analysis Volume [veh/h]	27	161	197	18	128	17	37	37	76	300	37	20
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.03
d_M, Delay for Movement [s/veh]	7.54	0.00	0.00	8.02	0.00	0.00	0.00	0.00	9.31	0.00	0.00	9.74
Movement LOS	A	A	A	A	A	A			A			A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.05	0.03	0.03	0.03	0.00	0.00	0.27	0.00	0.00	0.08
95th-Percentile Queue Length [ft/ln]	1.27	1.27	1.27	0.78	0.78	0.78	0.00	0.00	6.80	0.00	0.00	1.97
d_A, Approach Delay [s/veh]	0.53			0.89			9.31			9.74		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	1.94											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 27: Denton Street and Sedona Avenue

Control Type:	Roundabout	Delay (sec / veh):	2.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Denton Street			Denton Street			Sedona Avenue			Sedona Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Sedona Avenue			Sedona Avenue		
Base Volume Input [veh/h]	2	28	3	9	24	14	17	3	3	1	3	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	28	3	9	24	14	17	3	3	1	3	15
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	7	1	2	6	4	4	1	1	0	1	4
Total Analysis Volume [veh/h]	4	28	3	9	24	14	17	3	3	1	3	15
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	30			8			35			50		
Exiting Flow Rate [veh/h]	29			61			21			15		
Demand Flow Rate [veh/h]	4	28	3	9	24	14	17	3	3	1	3	15
Adjusted Demand Flow Rate [veh/h]	4	28	3	9	24	14	17	3	3	1	3	15

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	36	48	24	20
Capacity of Entry and Bypass Lanes [veh/h]	1339	1369	1333	1312
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1313	1342	1306	1286
X, volume / capacity	0.03	0.04	0.02	0.01

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.08	0.11	0.05	0.04
95th-Percentile Queue Length [ft]	2.05	2.72	1.34	1.12
Approach Delay [s/veh]	2.95	2.96	2.89	2.92
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	2.94			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 38: Shirk Street and Riggin Avenue

Control Type:	Signalized	Delay (sec / veh):	105.8
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.095

Intersection Setup

Name	Shirk Street			Shirk Street			Riggin Avenue			Riggin Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Shirk Street			Shirk Street			Riggin Avenue			Riggin Avenue		
Base Volume Input [veh/h]	149	298	296	90	186	38	42	1046	193	168	544	124
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	289	6	0	0	0	81	2	0	317	90	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	149	587	302	90	186	38	123	1048	193	485	634	134
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	147	76	23	47	10	31	262	48	121	159	34
Total Analysis Volume [veh/h]	149	587	302	90	186	38	123	1048	193	485	634	134
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	10	34	0	18	42	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	113	113	113	113	113	113	113	113	113	113	113
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	30	30	7	26	10	30	30	30	50	50
g / C, Green / Cycle	0.10	0.26	0.26	0.07	0.23	0.09	0.26	0.26	0.26	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.08	0.31	0.19	0.05	0.12	0.07	0.34	0.34	0.27	0.21	0.21
s, saturation flow rate [veh/h]	1781	1870	1589	1781	1816	1781	1870	1771	1781	1870	1759
c, Capacity [veh/h]	181	495	420	116	414	153	496	470	469	828	779
d1, Uniform Delay [s]	49.82	41.60	37.77	52.05	38.43	50.75	41.56	41.56	41.65	22.26	22.29
k, delay calibration	0.11	0.50	0.24	0.11	0.11	0.11	0.50	0.50	0.47	0.30	0.30
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.03	102.87	5.09	10.45	1.10	9.34	140.87	146.25	49.08	1.19	1.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	1.19	0.72	0.77	0.54	0.80	1.28	1.29	1.03	0.48	0.48
d, Delay for Lane Group [s/veh]	58.85	144.46	42.86	62.50	39.53	60.09	182.43	187.81	90.73	23.45	23.58
Lane Group LOS	E	F	D	E	D	E	F	F	F	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.58	27.75	8.14	2.85	5.59	3.82	33.06	32.01	19.32	7.60	7.21
50th-Percentile Queue Length [ft/ln]	114.49	693.87	203.60	71.28	139.85	95.38	826.57	800.14	482.96	189.97	180.27
95th-Percentile Queue Length [veh/ln]	8.09	40.16	12.82	5.13	9.47	6.87	48.67	47.44	27.07	12.12	11.61
95th-Percentile Queue Length [ft/ln]	202.23	1004.03	320.60	128.31	236.82	171.68	1216.81	1186.02	676.64	302.99	290.37

Movement, Approach, & Intersection Results

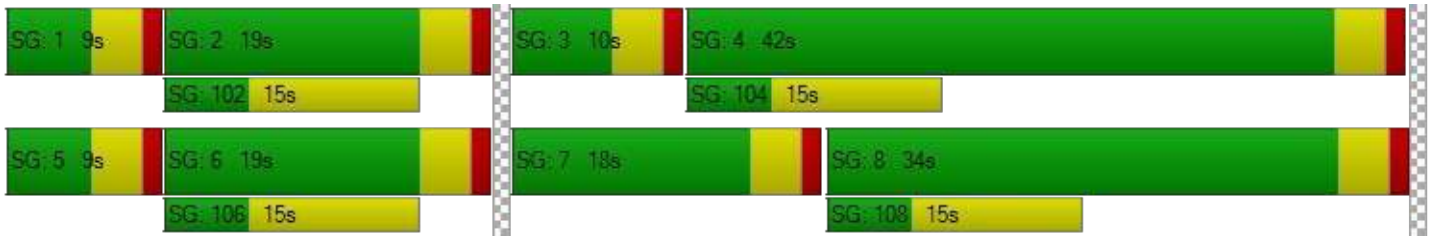
d_M, Delay for Movement [s/veh]	58.85	144.46	42.86	62.50	39.53	39.53	60.09	184.55	187.81	90.73	23.50	23.58
Movement LOS	E	F	D	E	D	D	E	F	F	F	C	C
d_A, Approach Delay [s/veh]	102.61			46.11			173.79			49.53		
Approach LOS	F			D			F			D		
d_I, Intersection Delay [s/veh]	105.84											
Intersection LOS	F											
Intersection V/C	1.095											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.98	47.98	47.98	47.98
l_p,int, Pedestrian LOS Score for Intersection	2.607	2.329	2.738	2.838
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	265	265	530	671
d_b, Bicycle Delay [s]	42.61	42.61	30.59	25.00
l_b,int, Bicycle LOS Score for Intersection	3.272	2.078	2.685	2.593
Bicycle LOS	C	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 39: Denton Street and Riggin Avenue

Control Type:	Signalized	Delay (sec / veh):	50.4
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.137

Intersection Setup

Name	Denton Street			Denton Street			Riggin Avenue			Riggin Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Riggin Avenue			Riggin Avenue		
Base Volume Input [veh/h]	9	0	7	28	0	0	0	1495	15	14	914	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	544	0	8	8	0	0	0	284	214
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	0	7	572	0	8	8	1495	15	14	1198	214
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	2	143	0	2	2	374	4	4	300	54
Total Analysis Volume [veh/h]	9	0	7	572	0	8	8	1495	15	14	1198	214
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	102	0	0	102	0	9	19	0	9	19	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	73	73	73	73	73	73	73	73	73
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	30	30	30	1	30	30	1	30	30
g / C, Green / Cycle	0.41	0.41	0.41	0.01	0.41	0.41	0.02	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.16	0.54	0.01	0.00	0.40	0.40	0.01	0.39	0.39
s, saturation flow rate [veh/h]	101	1063	1589	1781	1870	1863	1781	1870	1773
c, Capacity [veh/h]	118	533	650	21	764	762	33	777	737
d1, Uniform Delay [s]	18.40	24.53	12.86	35.94	21.50	21.52	35.57	20.38	20.52
k, delay calibration	0.11	0.50	0.11	0.11	0.44	0.44	0.11	0.41	0.42
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.52	60.02	0.01	10.78	28.07	28.39	8.40	16.23	18.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.14	1.07	0.01	0.38	0.99	0.99	0.42	0.93	0.94
d, Delay for Lane Group [s/veh]	18.92	84.55	12.87	46.72	49.57	49.91	43.97	36.61	39.09
Lane Group LOS	B	F	B	D	D	D	D	D	D
Critical Lane Group	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.16	18.20	0.07	0.20	17.55	17.58	0.32	14.06	14.00
50th-Percentile Queue Length [ft/ln]	4.11	454.96	1.87	5.05	438.86	439.57	7.96	351.55	349.94
95th-Percentile Queue Length [veh/ln]	0.30	26.44	0.13	0.36	24.43	24.46	0.57	20.21	20.13
95th-Percentile Queue Length [ft/ln]	7.40	660.96	3.37	9.08	610.64	611.49	14.33	505.30	503.33

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	18.92	18.92	18.92	84.55	84.55	12.87	46.72	49.74	49.91	43.97	37.60	39.09
Movement LOS	B	B	B	F	F	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	18.92			83.56			49.72			37.88		
Approach LOS	B			F			D			D		
d_I, Intersection Delay [s/veh]	50.36											
Intersection LOS	D											
Intersection V/C	1.137											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	28.18	28.18	28.18	28.18
l_p,int, Pedestrian LOS Score for Intersection	1.728	2.192	2.837	3.787
Crosswalk LOS	A	B	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	2675	2675	410	410
d_b, Bicycle Delay [s]	4.18	4.18	23.16	23.16
l_b,int, Bicycle LOS Score for Intersection	1.586	2.517	2.812	2.736
Bicycle LOS	A	B	C	B

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 66: Shirk Street and South Commercial Driveway (Site Access B)

Control Type:	Two-way stop	Delay (sec / veh):	13.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

Name	Shirk Street		Shirk Street		South Commercial Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Shirk Street		Shirk Street		South Commercial Driveway	
Base Volume Input [veh/h]	417	0	0	324	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	190	190	0	0	0	9
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	607	190	0	324	0	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	152	48	0	81	0	2
Total Analysis Volume [veh/h]	607	190	0	324	0	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	13.39
Movement LOS	A	A		A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.06
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	1.57
d_A, Approach Delay [s/veh]	0.00		0.00		13.39	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.11					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 67: East Commercial Driveway and Riggin Avenue (SIte Access D)

Control Type:	Two-way stop	Delay (sec / veh):	16.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.381

Intersection Setup

Name	East Commercial Driveway		Riggin Avenue		Riggin Avenue	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	East Commercial Driveway		Riggin Avenue		Riggin Avenue	
Base Volume Input [veh/h]	0	0	0	1051	692	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	199	0	8	93	199
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	199	0	1059	785	199
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	50	0	265	196	50
Total Analysis Volume [veh/h]	0	199	0	1059	785	199
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.38	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	16.07	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	1.77	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	44.21	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	16.07		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.43					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 78: West Commercial Driveway and Riggin Avenue (Site Access C)

Control Type:	Two-way stop	Delay (sec / veh):	15.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.365

Intersection Setup

Name	West Commercial Driveway		Riggin Avenue		Riggin Avenue	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	West Commercial Driveway		Riggin Avenue		Riggin Avenue	
Base Volume Input [veh/h]	0	0	0	1178	634	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	199	0	8	218	75
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	199	0	1186	852	75
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	50	0	297	213	19
Total Analysis Volume [veh/h]	0	199	0	1186	852	75
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.36	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	15.35	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	1.66	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	41.51	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.35		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.32					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 79: Shirk Street and North Commercial Driveway (Site Access A)

Control Type:	Two-way stop	Delay (sec / veh):	11.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name	Shirk Street		Shirk Street		North Commercial Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Shirk Street		Shirk Street		North Commercial Driveway	
Base Volume Input [veh/h]	360	0	0	380	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	190	19	0	0	9
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	369	190	19	380	0	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	48	5	95	0	2
Total Analysis Volume [veh/h]	369	190	19	380	0	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.00	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	8.58	0.00	0.00	11.11
Movement LOS	A	A	A	A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.03	0.03	0.00	0.05
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.80	0.80	0.00	1.14
d_A, Approach Delay [s/veh]	0.00		0.41		11.11	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.27					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 81: Denton Street and Site Access E

Control Type:	Two-way stop	Delay (sec / veh):	17.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Denton Street			Denton Street			Site Access E			Site Access E		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Site Access E			Site Access E		
Base Volume Input [veh/h]	0	28	0	0	28	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	222	0	0	0	0	0	2	0	552	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	222	28	0	0	28	0	2	0	552	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	7	0	0	7	0	1	0	138	0	0	0
Total Analysis Volume [veh/h]	222	28	0	0	28	0	2	0	552	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.57	0.00	0.00	7.27	0.00	0.00	17.58	17.74	12.30	33.21	13.88	8.44
Movement LOS	A	A	A	A	A	A	C	C	B	D	B	A
95th-Percentile Queue Length [veh/ln]	0.43	0.43	0.43	0.00	0.00	0.00	3.24	3.24	3.24	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	10.82	10.82	10.82	0.00	0.00	0.00	80.95	80.95	80.95	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	6.72			0.00			12.32			18.51		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	10.22											
Intersection LOS	C											

Visalia Costco

Vistro File: H:\...\Visalia Costco_20230503.vistro
Report File: H:\...\P3_PM_Alt.pdf

Scenario 7 Phase 3 PM_Alt
5/4/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
26	Shirk Street and Sedona Avenue	Two-way stop	HCM 7th Edition	WB Right	0.026	9.7	A
27	Denton Street and Sedona Avenue	Roundabout	HCM 7th Edition	SB Thru		2.9	A
38	Shirk Street and Riggin Avenue	Signalized	HCM 7th Edition	EB Right	1.066	102.8	F
39	Denton Street and Riggin Avenue	Signalized	HCM 7th Edition	SB Left	1.092	50.8	D
66	Shirk Street and South Commercial Driveway (Site Access B)	Two-way stop	HCM 7th Edition	WB Right	0.013	14.3	B
67	East Commercial Driveway and Riggin Avenue (SIte Access D)	Two-way stop	HCM 7th Edition	SB Right	0.229	14.1	B
78	West Commercial Driveway and Riggin Avenue (Site Access C)	Two-way stop	HCM 7th Edition	SB Right	0.299	14.4	B
79	Shirk Street and North Commercial Driveway (Site Access A)	Two-way stop	HCM 7th Edition	WB Right	0.009	10.6	B
80	Shirk Street and Central Access Driveway (Site Access F)	Signalized	HCM 7th Edition	WB Left	0.545	7.9	A
81	Denton Street and Site Access E	Two-way stop	HCM 7th Edition	EB Left	0.005	16.4	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 26: Shirk Street and Sedona Avenue

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.026

Intersection Setup

Name	Shirk Street			Shirk Street			Sedona Avenue			Sedona Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Shirk Street			Shirk Street			Sedona Avenue			Sedona Avenue		
Base Volume Input [veh/h]	27	143	197	18	109	17	37	37	76	300	37	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	18	0	1	18	0	0	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	27	161	197	19	127	17	37	37	76	300	37	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	40	49	5	32	4	9	9	19	75	9	5
Total Analysis Volume [veh/h]	27	161	197	19	127	17	37	37	76	300	37	20
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.03
d_M, Delay for Movement [s/veh]	7.54	0.00	0.00	8.02	0.00	0.00	0.00	0.00	9.30	0.00	0.00	9.74
Movement LOS	A	A	A	A	A	A			A			A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.05	0.03	0.03	0.03	0.00	0.00	0.27	0.00	0.00	0.08
95th-Percentile Queue Length [ft/ln]	1.27	1.27	1.27	0.82	0.82	0.82	0.00	0.00	6.79	0.00	0.00	1.97
d_A, Approach Delay [s/veh]	0.53			0.93			9.30			9.74		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	1.95											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 27: Denton Street and Sedona Avenue

Control Type:	Roundabout	Delay (sec / veh):	2.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Denton Street			Denton Street			Sedona Avenue			Sedona Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Sedona Avenue			Sedona Avenue		
Base Volume Input [veh/h]	2	28	3	9	24	14	17	3	3	1	3	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	0	0	0	0	0	0	1	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	28	3	9	24	14	17	3	4	1	3	15
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	7	1	2	6	4	4	1	1	0	1	4
Total Analysis Volume [veh/h]	4	28	3	9	24	14	17	3	4	1	3	15
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	30			8			35			50		
Exiting Flow Rate [veh/h]	30			61			21			15		
Demand Flow Rate [veh/h]	4	28	3	9	24	14	17	3	4	1	3	15
Adjusted Demand Flow Rate [veh/h]	4	28	3	9	24	14	17	3	4	1	3	15

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	36	48	25	20
Capacity of Entry and Bypass Lanes [veh/h]	1339	1369	1333	1312
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1313	1342	1306	1286
X, volume / capacity	0.03	0.04	0.02	0.01

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.08	0.11	0.06	0.04
95th-Percentile Queue Length [ft]	2.05	2.72	1.40	1.12
Approach Delay [s/veh]	2.95	2.96	2.90	2.92
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	2.94			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 38: Shirk Street and Riggin Avenue

Control Type:	Signalized	Delay (sec / veh):	102.8
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.066

Intersection Setup

Name	Shirk Street			Shirk Street			Riggin Avenue			Riggin Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Shirk Street			Shirk Street			Riggin Avenue			Riggin Avenue		
Base Volume Input [veh/h]	149	298	296	90	186	38	42	1046	193	168	544	124
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	280	15	54	91	27	79	4	0	226	63	101
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	149	578	311	144	277	65	121	1050	193	394	607	225
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	145	78	36	69	16	30	263	48	99	152	56
Total Analysis Volume [veh/h]	149	578	311	144	277	65	121	1050	193	394	607	225
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	9	27	0	10	28	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	114	114	114	114	114	114	114	114	114	114	114
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	30	30	11	30	10	30	30	27	47	47
g / C, Green / Cycle	0.10	0.26	0.26	0.10	0.26	0.08	0.26	0.26	0.24	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.08	0.31	0.20	0.08	0.19	0.07	0.34	0.34	0.22	0.23	0.23
s, saturation flow rate [veh/h]	1781	1870	1589	1781	1809	1781	1870	1771	1781	1870	1700
c, Capacity [veh/h]	180	491	417	175	469	150	491	465	421	776	705
d1, Uniform Delay [s]	50.33	42.11	38.61	50.51	38.61	51.35	42.09	42.09	42.73	25.47	25.52
k, delay calibration	0.11	0.50	0.26	0.11	0.24	0.11	0.50	0.50	0.33	0.37	0.37
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.21	99.59	6.32	9.26	4.85	9.61	146.96	152.40	23.08	2.14	2.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	1.18	0.75	0.82	0.73	0.80	1.29	1.31	0.94	0.56	0.56
d, Delay for Lane Group [s/veh]	59.55	141.70	44.93	59.77	43.45	60.96	189.05	194.49	65.80	27.61	27.93
Lane Group LOS	E	F	D	E	D	E	F	F	E	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.63	27.24	8.68	4.48	9.34	3.80	33.74	32.65	13.50	9.35	8.62
50th-Percentile Queue Length [ft/ln]	115.82	681.07	216.89	112.10	233.40	95.03	843.43	816.19	337.48	233.66	215.39
95th-Percentile Queue Length [veh/ln]	8.16	39.35	13.51	7.96	14.35	6.84	49.78	48.50	19.52	14.36	13.43
95th-Percentile Queue Length [ft/ln]	204.07	983.66	337.66	198.92	358.67	171.06	1244.61	1212.59	488.12	359.00	335.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.55	141.70	44.93	59.77	43.45	43.45	60.96	191.20	194.49	65.80	27.70	27.93
Movement LOS	E	F	D	E	D	D	E	F	F	E	C	C
d_A, Approach Delay [s/veh]	100.91			48.29			180.11			39.99		
Approach LOS	F			D			F			D		
d_I, Intersection Delay [s/veh]	102.80											
Intersection LOS	F											
Intersection V/C	1.066											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	48.52	48.52	48.52	48.52
l_p,int, Pedestrian LOS Score for Intersection	2.608	2.411	2.739	2.845
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	262	262	402	420
d_b, Bicycle Delay [s]	43.15	43.15	36.48	35.68
l_b,int, Bicycle LOS Score for Intersection	3.272	2.362	2.685	2.571
Bicycle LOS	C	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 39: Denton Street and Riggin Avenue

Control Type:	Signalized	Delay (sec / veh):	50.8
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.092

Intersection Setup

Name	Denton Street			Denton Street			Riggin Avenue			Riggin Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Riggin Avenue			Riggin Avenue		
Base Volume Input [veh/h]	9	0	7	28	0	0	0	1495	15	14	914	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	490	0	10	19	54	0	0	311	187
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	0	7	518	0	10	19	1549	15	14	1225	187
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	2	130	0	3	5	387	4	4	306	47
Total Analysis Volume [veh/h]	9	0	7	518	0	10	19	1549	15	14	1225	187
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	91	0	0	91	0	9	30	0	9	30	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	20.0	0.0	0.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	74	74	74	74	74	74	74	74	74
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	30	30	30	2	30	30	1	30	30
g / C, Green / Cycle	0.41	0.41	0.41	0.02	0.41	0.41	0.02	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.16	0.49	0.01	0.01	0.42	0.42	0.01	0.38	0.39
s, saturation flow rate [veh/h]	101	1063	1589	1781	1870	1864	1781	1870	1785
c, Capacity [veh/h]	117	530	647	42	770	767	33	760	726
d1, Uniform Delay [s]	18.53	24.43	13.04	35.51	21.68	21.68	35.77	21.07	21.21
k, delay calibration	0.11	0.50	0.11	0.11	0.47	0.47	0.11	0.41	0.42
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.52	33.67	0.01	7.44	35.85	36.30	8.33	18.98	21.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.14	0.98	0.02	0.45	1.02	1.02	0.42	0.95	0.95
d, Delay for Lane Group [s/veh]	19.05	58.11	13.05	42.94	57.53	57.98	44.10	40.06	42.55
Lane Group LOS	B	E	B	D	F	F	D	D	D
Critical Lane Group	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.17	14.06	0.09	0.42	19.63	19.66	0.32	14.81	14.78
50th-Percentile Queue Length [ft/ln]	4.15	351.48	2.36	10.38	490.64	491.38	7.98	370.20	369.46
95th-Percentile Queue Length [veh/ln]	0.30	20.21	0.17	0.75	27.22	27.28	0.57	21.12	21.08
95th-Percentile Queue Length [ft/ln]	7.47	505.21	4.26	18.68	680.57	682.10	14.37	527.98	527.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	19.05	19.05	19.05	58.11	58.11	13.05	42.94	57.75	57.98	44.10	41.09	42.55
Movement LOS	B	B	B	E	E	B	D	F	E	D	D	D
d_A, Approach Delay [s/veh]	19.05			57.25			57.58			41.31		
Approach LOS	B			E			E			D		
d_I, Intersection Delay [s/veh]	50.83											
Intersection LOS	D											
Intersection V/C	1.092											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	28.35	28.35	28.35	28.35
l_p,int, Pedestrian LOS Score for Intersection	1.728	2.170	2.855	3.711
Crosswalk LOS	A	B	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	2364	2364	706	706
d_b, Bicycle Delay [s]	1.22	1.22	15.39	15.39
l_b,int, Bicycle LOS Score for Intersection	1.586	2.431	2.866	2.736
Bicycle LOS	A	B	C	B

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 66: Shirk Street and South Commercial Driveway (Site Access B)

Control Type:	Two-way stop	Delay (sec / veh):	14.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name	Shirk Street		Shirk Street		South Commercial Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Shirk Street		Shirk Street		South Commercial Driveway	
Base Volume Input [veh/h]	417	0	0	324	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	271	189	0	172	0	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	688	189	0	496	0	5
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	172	47	0	124	0	1
Total Analysis Volume [veh/h]	688	189	0	496	0	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	14.25
Movement LOS	A	A		A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.96
d_A, Approach Delay [s/veh]	0.00		0.00		14.25	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.05					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 67: East Commercial Driveway and Riggin Avenue (SIte Access D)

Control Type:	Two-way stop	Delay (sec / veh):	14.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.229

Intersection Setup

Name	East Commercial Driveway		Riggin Avenue		Riggin Avenue	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	East Commercial Driveway		Riggin Avenue		Riggin Avenue	
Base Volume Input [veh/h]	0	0	0	1051	692	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	117	0	73	177	143
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	117	0	1124	869	143
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	29	0	281	217	36
Total Analysis Volume [veh/h]	0	117	0	1124	869	143
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.23	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	14.11	0.00	0.00	0.00	0.00
Movement LOS		B		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.87	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	21.85	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.11		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.73					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 78: West Commercial Driveway and Riggin Avenue (Site Access C)

Control Type:	Two-way stop	Delay (sec / veh):	14.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.299

Intersection Setup

Name	West Commercial Driveway		Riggin Avenue		Riggin Avenue	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	West Commercial Driveway		Riggin Avenue		Riggin Avenue	
Base Volume Input [veh/h]	0	0	0	1178	634	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	163	0	73	226	68
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	163	0	1251	860	68
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	41	0	313	215	17
Total Analysis Volume [veh/h]	0	163	0	1251	860	68
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.30	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	14.40	0.00	0.00	0.00	0.00
Movement LOS		B		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	1.25	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	31.20	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.40		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.00					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 79: Shirk Street and North Commercial Driveway (Site Access A)

Control Type:	Two-way stop	Delay (sec / veh):	10.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name	Shirk Street		Shirk Street		North Commercial Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Shirk Street		Shirk Street		North Commercial Driveway	
Base Volume Input [veh/h]	360	0	0	380	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	62	0	18	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	372	62	0	398	0	6
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	93	16	0	100	0	2
Total Analysis Volume [veh/h]	372	62	0	398	0	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.20	0.00	0.00	10.61
Movement LOS	A	A	A	A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.70
d_A, Approach Delay [s/veh]	0.00		0.00		10.61	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.08					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 80: Shirk Street and Central Access Driveway (Site Access F)

Control Type:	Signalized	Delay (sec / veh):	7.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.545

Intersection Setup

Name	Shirk Street		Shirk Street		Central Access Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	Shirk Street		Shirk Street		Central Access Driveway	
Base Volume Input [veh/h]	417	0	0	380	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	69	208	18	0	172	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	486	208	18	380	172	5
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	122	52	5	95	43	1
Total Analysis Volume [veh/h]	486	208	18	380	172	5
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	10	0	0	10	5	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	14	0	0	14	46	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	0.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C
C, Cycle Length [s]	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00
g_i, Effective Green Time [s]	44	44	8
g / C, Green / Cycle	0.73	0.73	0.13
(v / s)_i Volume / Saturation Flow Rate	0.39	0.22	0.10
s, saturation flow rate [veh/h]	1776	1823	1775
c, Capacity [veh/h]	1304	1401	235
d1, Uniform Delay [s]	3.48	2.70	25.10
k, delay calibration	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00
d2, Incremental Delay [s]	1.56	0.51	4.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.53	0.28	0.75
d, Delay for Lane Group [s/veh]	5.04	3.21	29.89
Lane Group LOS	A	A	C
Critical Lane Group	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.31	0.97	2.59
50th-Percentile Queue Length [ft/ln]	57.83	24.35	64.83
95th-Percentile Queue Length [veh/ln]	4.16	1.75	4.67
95th-Percentile Queue Length [ft/ln]	104.09	43.83	116.70

Movement, Approach, & Intersection Results

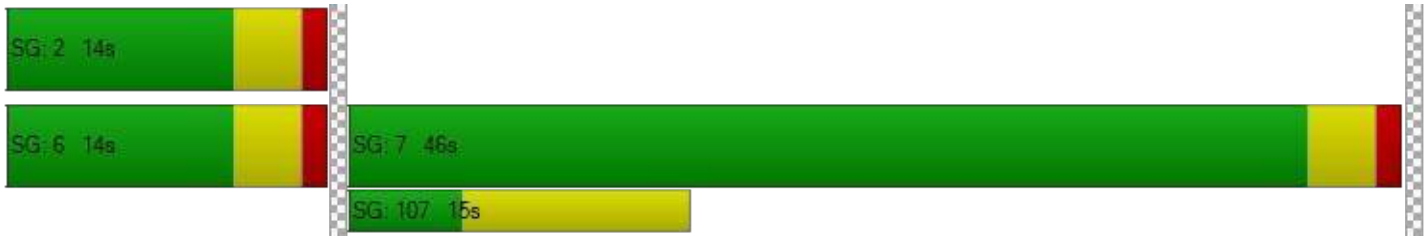
d_M, Delay for Movement [s/veh]	5.04	5.04	3.21	3.21	29.89	29.89
Movement LOS	A	A	A	A	C	C
d_A, Approach Delay [s/veh]	5.04		3.21		29.89	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	7.93					
Intersection LOS	A					
Intersection V/C	0.545					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.69	21.69	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.303	2.129	0.000
Crosswalk LOS	B	B	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	333	1399
d_b, Bicycle Delay [s]	20.85	20.85	2.71
I_b,int, Bicycle LOS Score for Intersection	2.705	2.216	1.852
Bicycle LOS	B	B	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 81: Denton Street and Site Access E

Control Type:	Two-way stop	Delay (sec / veh):	16.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Denton Street			Denton Street			Site Access E			Site Access E		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Site Access E			Site Access E		
Base Volume Input [veh/h]	0	28	0	0	28	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	206	0	0	0	0	1	2	0	499	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	206	28	0	0	28	1	2	0	499	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	7	0	0	7	0	1	0	125	0	0	0
Total Analysis Volume [veh/h]	206	28	0	0	28	1	2	0	499	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.54	0.00	0.00	7.27	0.00	0.00	16.38	16.59	11.61	28.04	13.43	8.44
Movement LOS	A	A	A	A	A	A	C	C	B	D	B	A
95th-Percentile Queue Length [veh/ln]	0.39	0.39	0.39	0.00	0.00	0.00	2.68	2.68	2.68	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	9.85	9.85	9.85	0.00	0.00	0.00	66.96	66.96	66.96	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	6.64			0.00			11.63			16.63		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	9.66											
Intersection LOS	C											

Visalia Costco

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Report File: H:\...\P3_SAT.pdf

Scenario 4 Phase 3 SAT
5/4/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
26	Shirk Street and Sedona Avenue	Two-way stop	HCM 7th Edition	WB Right	0.027	9.5	A
27	Denton Street and Sedona Avenue	Roundabout	HCM 7th Edition	SB Thru		3.0	A
38	Shirk Street and Riggin Avenue	Signalized	HCM 7th Edition	WB Left	1.066	80.8	F
39	Denton Street and Riggin Avenue	Signalized	HCM 7th Edition	SB Left	1.147	50.2	D
66	Shirk Street and South Commercial Driveway (Site Access B)	Two-way stop	HCM 7th Edition	WB Right	0.033	14.5	B
67	East Commercial Driveway and Riggin Avenue (SIte Access D)	Two-way stop	HCM 7th Edition	SB Right	0.412	14.4	B
78	West Commercial Driveway and Riggin Avenue (Site Access C)	Two-way stop	HCM 7th Edition	SB Right	0.408	14.2	B
79	Shirk Street and North Commercial Driveway (Site Access A)	Two-way stop	HCM 7th Edition	WB Right	0.024	11.7	B
81	Denton Street and Site Access E	Two-way stop	HCM 7th Edition	EB Left	0.010	25.6	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 26: Shirk Street and Sedona Avenue

Control Type:	Two-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.027

Intersection Setup

Name	Shirk Street			Shirk Street			Sedona Avenue			Sedona Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Shirk Street			Shirk Street			Sedona Avenue			Sedona Avenue		
Base Volume Input [veh/h]	16	98	179	18	135	10	12	35	0	309	35	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	25	0	0	29	0	0	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	123	179	18	164	10	12	35	0	309	35	22
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	31	45	5	41	3	3	9	0	77	9	6
Total Analysis Volume [veh/h]	16	123	179	18	164	10	12	35	0	309	35	22
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
d_M, Delay for Movement [s/veh]	7.59	0.00	0.00	7.88	0.00	0.00	0.00	0.00	9.11	0.00	0.00	9.47
Movement LOS	A	A	A	A	A	A			A			A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.08
95th-Percentile Queue Length [ft/ln]	0.75	0.75	0.75	0.77	0.77	0.77	0.00	0.00	0.00	0.00	0.00	2.05
d_A, Approach Delay [s/veh]	0.38			0.74			9.11			9.47		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.89											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 27: Denton Street and Sedona Avenue

Control Type:	Roundabout	Delay (sec / veh):	3.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Denton Street			Denton Street			Sedona Avenue			Sedona Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Sedona Avenue			Sedona Avenue		
Base Volume Input [veh/h]	2	29	2	10	28	18	20	3	2	2	2	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	29	2	10	28	18	20	3	2	2	2	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	7	1	3	7	5	5	1	1	1	1	3
Total Analysis Volume [veh/h]	5	29	2	10	28	18	20	3	2	2	2	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	34			9			41			55		
Exiting Flow Rate [veh/h]	33			63			26			15		
Demand Flow Rate [veh/h]	5	29	2	10	28	18	20	3	2	2	2	13
Adjusted Demand Flow Rate [veh/h]	5	29	2	10	28	18	20	3	2	2	2	13

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	37	58	26	18
Capacity of Entry and Bypass Lanes [veh/h]	1334	1368	1324	1305
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1308	1341	1298	1280
X, volume / capacity	0.03	0.04	0.02	0.01

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.08	0.13	0.06	0.04
95th-Percentile Queue Length [ft]	2.12	3.27	1.47	1.01
Approach Delay [s/veh]	2.97	3.01	2.92	2.92
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	2.97			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 38: Shirk Street and Riggin Avenue

Control Type:	Signalized	Delay (sec / veh):	80.8
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.066

Intersection Setup

Name	Shirk Street			Shirk Street			Riggin Avenue			Riggin Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Shirk Street			Shirk Street			Riggin Avenue			Riggin Avenue		
Base Volume Input [veh/h]	175	252	106	69	331	38	40	341	147	288	771	126
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	413	8	0	0	0	116	2	0	426	120	14
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	175	665	114	69	331	38	156	343	147	714	891	140
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	166	29	17	83	10	39	86	37	179	223	35
Total Analysis Volume [veh/h]	175	665	114	69	331	38	156	343	147	714	891	140
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	9	23	0	9	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	97	97	97	97	97	97	97	97	97	97	97
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	30	30	5	23	10	16	16	30	36	36
g / C, Green / Cycle	0.12	0.31	0.31	0.05	0.24	0.11	0.17	0.17	0.31	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.10	0.36	0.07	0.04	0.20	0.09	0.14	0.14	0.40	0.28	0.29
s, saturation flow rate [veh/h]	1781	1870	1589	1781	1837	1781	1870	1683	1781	1870	1784
c, Capacity [veh/h]	212	578	491	90	442	192	313	282	548	687	655
d1, Uniform Delay [s]	41.73	33.51	24.94	45.47	35.00	42.31	38.96	39.03	33.58	26.90	27.21
k, delay calibration	0.11	0.50	0.11	0.11	0.19	0.11	0.11	0.11	0.50	0.38	0.40
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.81	86.39	0.24	12.43	7.27	7.98	5.28	6.17	149.16	5.85	7.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	1.15	0.23	0.76	0.83	0.81	0.82	0.83	1.30	0.76	0.78
d, Delay for Lane Group [s/veh]	49.54	119.91	25.18	57.90	42.27	50.29	44.24	45.20	182.74	32.74	34.41
Lane Group LOS	D	F	C	E	D	D	D	D	F	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.51	27.06	1.97	1.94	9.03	4.05	6.28	5.79	35.21	11.33	11.46
50th-Percentile Queue Length [ft/ln]	112.82	676.61	49.23	48.59	225.74	101.21	156.96	144.74	880.20	283.26	286.55
95th-Percentile Queue Length [veh/ln]	8.00	38.82	3.54	3.50	13.96	7.29	10.39	9.74	52.27	16.85	17.01
95th-Percentile Queue Length [ft/ln]	199.92	970.54	88.62	87.47	348.94	182.17	259.70	243.40	1306.63	421.27	425.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.54	119.91	25.18	57.90	42.27	42.27	50.29	44.48	45.20	182.74	33.44	34.41
Movement LOS	D	F	C	E	D	D	D	D	D	F	C	C
d_A, Approach Delay [s/veh]	95.68			44.73			46.05			94.60		
Approach LOS	F			D			D			F		
d_I, Intersection Delay [s/veh]	80.81											
Intersection LOS	F											
Intersection V/C	1.066											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.99	39.99	39.99	39.99
l_p,int, Pedestrian LOS Score for Intersection	2.659	2.400	2.646	2.748
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	309	309	391	391
d_b, Bicycle Delay [s]	34.73	34.73	31.43	31.43
l_b,int, Bicycle LOS Score for Intersection	3.134	2.282	2.093	2.999
Bicycle LOS	C	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 39: Denton Street and Riggin Avenue

Control Type:	Signalized	Delay (sec / veh):	50.2
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.147

Intersection Setup

Name	Denton Street			Denton Street			Riggin Avenue			Riggin Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Riggin Avenue			Riggin Avenue		
Base Volume Input [veh/h]	5	0	3	32	0	0	0	520	13	10	336	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	717	0	11	11	0	0	0	401	303
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	0	3	749	0	11	11	520	13	10	737	303
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	1	187	0	3	3	130	3	3	184	76
Total Analysis Volume [veh/h]	5	0	3	749	0	11	11	520	13	10	737	303
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	125
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	97	0	0	97	0	9	19	0	9	19	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	20.0	0.0	0.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	66	66	66	66	66	66	66	66	66
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	30	30	30	1	23	23	1	23	23
g / C, Green / Cycle	0.46	0.46	0.46	0.01	0.35	0.35	0.01	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.11	0.64	0.01	0.01	0.14	0.14	0.01	0.29	0.29
s, saturation flow rate [veh/h]	76	1173	1589	1781	1870	1854	1781	1870	1687
c, Capacity [veh/h]	124	645	725	27	650	644	24	647	584
d1, Uniform Delay [s]	16.05	20.45	9.78	32.09	16.34	16.34	32.15	19.85	19.86
k, delay calibration	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.19	0.19
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.22	89.10	0.01	10.00	0.42	0.42	10.57	5.24	5.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.06	1.16	0.02	0.41	0.41	0.41	0.41	0.84	0.84
d, Delay for Lane Group [s/veh]	16.27	109.56	9.79	42.10	16.76	16.76	42.72	25.09	25.65
Lane Group LOS	B	F	A	D	B	B	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.07	25.85	0.08	0.24	2.89	2.87	0.22	7.93	7.25
50th-Percentile Queue Length [ft/ln]	1.79	646.31	1.98	6.02	72.28	71.82	5.59	198.19	181.21
95th-Percentile Queue Length [veh/ln]	0.13	37.92	0.14	0.43	5.20	5.17	0.40	12.55	11.66
95th-Percentile Queue Length [ft/ln]	3.22	947.92	3.57	10.83	130.11	129.28	10.07	313.63	291.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	16.27	16.27	16.27	109.56	109.56	9.79	42.10	16.76	16.76	42.72	25.24	25.65
Movement LOS	B	B	B	F	F	A	D	B	B	D	C	C
d_A, Approach Delay [s/veh]	16.27			108.11			17.27			25.53		
Approach LOS	B			F			B			C		
d_I, Intersection Delay [s/veh]	50.17											
Intersection LOS	D											
Intersection V/C	1.147											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.43	24.43	24.43	24.43
l_p,int, Pedestrian LOS Score for Intersection	1.715	2.275	2.545	3.804
Crosswalk LOS	A	B	B	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	2835	2835	457	457
d_b, Bicycle Delay [s]	5.71	5.71	19.52	19.52
l_b,int, Bicycle LOS Score for Intersection	1.573	2.814	2.008	2.426
Bicycle LOS	A	C	B	B

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 66: Shirk Street and South Commercial Driveway (Site Access B)

Control Type:	Two-way stop	Delay (sec / veh):	14.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.033

Intersection Setup

Name	Shirk Street		Shirk Street		South Commercial Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Shirk Street		Shirk Street		South Commercial Driveway	
Base Volume Input [veh/h]	378	0	0	435	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	271	271	0	0	0	13
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	649	271	0	435	0	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	162	68	0	109	0	3
Total Analysis Volume [veh/h]	649	271	0	435	0	13
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	14.47
Movement LOS	A	A		A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.10
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	2.56
d_A, Approach Delay [s/veh]	0.00		0.00		14.47	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.14					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 67: East Commercial Driveway and Riggin Avenue (Site Access D)

Control Type:	Two-way stop	Delay (sec / veh):	14.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.412

Intersection Setup

Name	East Commercial Driveway		Riggin Avenue		Riggin Avenue	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	East Commercial Driveway		Riggin Avenue		Riggin Avenue	
Base Volume Input [veh/h]	0	0	0	443	278	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	268	0	11	131	282
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	268	0	454	409	282
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	67	0	114	102	71
Total Analysis Volume [veh/h]	0	268	0	454	409	282
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.41	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	14.36	0.00	0.00	0.00	0.00
Movement LOS		B		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	2.02	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	50.42	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.36		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	2.72					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 78: West Commercial Driveway and Riggin Avenue (Site Access C)

Control Type:	Two-way stop	Delay (sec / veh):	14.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.408

Intersection Setup

Name	West Commercial Driveway		Riggin Avenue		Riggin Avenue	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	West Commercial Driveway		Riggin Avenue		Riggin Avenue	
Base Volume Input [veh/h]	0	0	0	443	278	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	268	0	11	293	106
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	268	0	454	571	106
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	67	0	114	143	27
Total Analysis Volume [veh/h]	0	268	0	454	571	106
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.41	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	14.19	0.00	0.00	0.00	0.00
Movement LOS		B		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	1.98	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	49.60	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.19		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	2.72					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 79: Shirk Street and North Commercial Driveway (Site Access A)

Control Type:	Two-way stop	Delay (sec / veh):	11.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.024

Intersection Setup

Name	Shirk Street		Shirk Street		North Commercial Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Shirk Street		Shirk Street		North Commercial Driveway	
Base Volume Input [veh/h]	378	0	0	445	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	13	271	29	0	0	13
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	391	271	29	445	0	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	98	68	7	111	0	3
Total Analysis Volume [veh/h]	391	271	29	445	0	13
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.00	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	8.92	0.00	0.00	11.69
Movement LOS	A	A	A	A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.05	0.05	0.00	0.07
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.23	1.23	0.00	1.81
d_A, Approach Delay [s/veh]	0.00		0.55		11.69	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.36					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 81: Denton Street and Site Access E

Control Type:	Two-way stop	Delay (sec / veh):	25.6
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name	Denton Street			Denton Street			Site Access E			Site Access E		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Site Access E			Site Access E		
Base Volume Input [veh/h]	0	29	0	0	32	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	314	0	0	0	0	0	3	0	728	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	314	29	0	0	32	0	3	0	728	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	7	0	0	8	0	1	0	182	0	0	0
Total Analysis Volume [veh/h]	314	29	0	0	32	0	3	0	728	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.20	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.76	0.00	0.00	7.27	0.00	0.00	25.56	25.26	16.48	78.34	17.23	8.44
Movement LOS	A	A	A	A	A	A	D	D	C	F	C	A
95th-Percentile Queue Length [veh/ln]	0.68	0.68	0.68	0.00	0.00	0.00	6.27	6.27	6.27	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	16.95	16.95	16.95	0.00	0.00	0.00	156.70	156.70	156.70	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	7.10			0.00			16.52			34.67		
Approach LOS	A			A			C			D		
d_I, Intersection Delay [s/veh]	13.12											
Intersection LOS	D											

Visalia Costco

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Report File: H:\...\P3_SAT_Alt.pdf

Scenario 8 Phase 3 SAT_Alt
5/4/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
26	Shirk Street and Sedona Avenue	Two-way stop	HCM 7th Edition	WB Right	0.027	9.5	A
27	Denton Street and Sedona Avenue	Roundabout	HCM 7th Edition	SB Thru		3.0	A
38	Shirk Street and Riggin Avenue	Signalized	HCM 7th Edition	WB Left	1.018	80.3	F
39	Denton Street and Riggin Avenue	Signalized	HCM 7th Edition	SB Left	1.076	38.5	D
66	Shirk Street and South Commercial Driveway (Site Access B)	Two-way stop	HCM 7th Edition	WB Right	0.024	15.9	C
67	East Commercial Driveway and Riggin Avenue (SIte Access D)	Two-way stop	HCM 7th Edition	SB Right	0.257	12.7	B
78	West Commercial Driveway and Riggin Avenue (Site Access C)	Two-way stop	HCM 7th Edition	SB Right	0.340	13.4	B
79	Shirk Street and North Commercial Driveway (Site Access A)	Two-way stop	HCM 7th Edition	WB Right	0.015	10.9	B
80	Shirk Street and Central Access Driveway (Site Access F)	Signalized	HCM 7th Edition	WB Left	0.634	9.7	A
81	Denton Street and Site Access E	Two-way stop	HCM 7th Edition	EB Left	0.010	22.5	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 26: Shirk Street and Sedona Avenue

Control Type:	Two-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.027

Intersection Setup

Name	Shirk Street			Shirk Street			Sedona Avenue			Sedona Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Shirk Street			Shirk Street			Sedona Avenue			Sedona Avenue		
Base Volume Input [veh/h]	16	98	179	18	135	10	12	35	0	309	35	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	25	0	1	28	0	0	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	123	179	19	163	10	12	35	0	309	35	22
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	31	45	5	41	3	3	9	0	77	9	6
Total Analysis Volume [veh/h]	16	123	179	19	163	10	12	35	0	309	35	22
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
d_M, Delay for Movement [s/veh]	7.59	0.00	0.00	7.88	0.00	0.00	0.00	0.00	9.11	0.00	0.00	9.47
Movement LOS	A	A	A	A	A	A			A			A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.08
95th-Percentile Queue Length [ft/ln]	0.75	0.75	0.75	0.81	0.81	0.81	0.00	0.00	0.00	0.00	0.00	2.05
d_A, Approach Delay [s/veh]	0.38			0.78			9.11			9.47		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.90											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 27: Denton Street and Sedona Avenue

Control Type:	Roundabout	Delay (sec / veh):	3.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Denton Street			Denton Street			Sedona Avenue			Sedona Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Sedona Avenue			Sedona Avenue		
Base Volume Input [veh/h]	2	29	2	10	28	18	20	3	2	2	2	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	0	0	0	1	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	29	2	10	28	18	20	3	3	2	2	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	7	1	3	7	5	5	1	1	1	1	3
Total Analysis Volume [veh/h]	5	29	2	10	28	18	20	3	3	2	2	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	34			9			41			55		
Exiting Flow Rate [veh/h]	34			63			26			15		
Demand Flow Rate [veh/h]	5	29	2	10	28	18	20	3	3	2	2	13
Adjusted Demand Flow Rate [veh/h]	5	29	2	10	28	18	20	3	3	2	2	13

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	37	58	27	18
Capacity of Entry and Bypass Lanes [veh/h]	1334	1368	1324	1305
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1308	1341	1298	1280
X, volume / capacity	0.03	0.04	0.02	0.01

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.08	0.13	0.06	0.04
95th-Percentile Queue Length [ft]	2.12	3.27	1.53	1.01
Approach Delay [s/veh]	2.97	3.01	2.93	2.92
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	2.97			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 38: Shirk Street and Riggin Avenue

Control Type:	Signalized	Delay (sec / veh):	80.3
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.018

Intersection Setup

Name	Shirk Street			Shirk Street			Riggin Avenue			Riggin Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Shirk Street			Shirk Street			Riggin Avenue			Riggin Avenue		
Base Volume Input [veh/h]	175	252	106	69	331	38	40	341	147	288	771	126
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	400	21	72	117	35	112	6	0	309	85	143
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	175	652	127	141	448	73	152	347	147	597	856	269
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	163	32	35	112	18	38	87	37	149	214	67
Total Analysis Volume [veh/h]	175	652	127	141	448	73	152	347	147	597	856	269
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	28	19	0	28	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	106	106	106	106	106	106	106	106	106	106	106
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	32	32	10	30	11	18	18	30	37	37
g / C, Green / Cycle	0.12	0.30	0.30	0.10	0.28	0.10	0.17	0.17	0.28	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.10	0.35	0.08	0.08	0.29	0.09	0.14	0.14	0.34	0.31	0.32
s, saturation flow rate [veh/h]	1781	1870	1589	1781	1825	1781	1870	1684	1781	1870	1722
c, Capacity [veh/h]	210	565	480	175	514	186	311	280	504	644	593
d1, Uniform Delay [s]	45.72	37.02	28.09	46.84	38.08	46.47	42.76	42.84	38.03	32.83	33.56
k, delay calibration	0.11	0.50	0.11	0.11	0.46	0.11	0.11	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.22	88.47	0.29	8.48	41.28	8.37	5.72	6.69	102.11	16.68	23.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	1.15	0.26	0.81	1.01	0.82	0.83	0.84	1.19	0.89	0.93
d, Delay for Lane Group [s/veh]	53.95	125.49	28.38	55.32	79.36	54.84	48.48	49.53	140.14	49.52	57.07
Lane Group LOS	D	F	C	E	F	D	D	D	F	D	E
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.97	28.17	2.48	4.04	18.99	4.34	7.00	6.46	27.11	16.54	17.26
50th-Percentile Queue Length [ft/ln]	124.17	704.36	62.00	101.04	474.66	108.52	175.03	161.48	677.76	413.53	431.56
95th-Percentile Queue Length [veh/ln]	8.62	40.30	4.46	7.28	26.35	7.76	11.34	10.63	39.39	23.21	24.08
95th-Percentile Queue Length [ft/ln]	215.54	1007.45	111.60	181.88	658.78	193.95	283.51	265.68	984.74	580.28	601.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.95	125.49	28.38	55.32	79.36	79.36	54.84	48.75	49.53	140.14	52.02	57.07
Movement LOS	D	F	C	E	E	E	D	D	D	F	D	E
d_A, Approach Delay [s/veh]	99.44			74.24			50.36			83.36		
Approach LOS	F			E			D			F		
d_I, Intersection Delay [s/veh]	80.34											
Intersection LOS	F											
Intersection V/C	1.018											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.45	44.45	44.45	44.45
l_p,int, Pedestrian LOS Score for Intersection	2.664	2.514	2.651	2.765
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	283	283	283	283
d_b, Bicycle Delay [s]	39.13	39.13	39.13	39.13
l_b,int, Bicycle LOS Score for Intersection	3.134	2.652	2.093	2.980
Bicycle LOS	C	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 39: Denton Street and Riggin Avenue

Control Type:	Signalized	Delay (sec / veh):	38.5
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.076

Intersection Setup

Name	Denton Street			Denton Street			Riggin Avenue			Riggin Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Riggin Avenue			Riggin Avenue		
Base Volume Input [veh/h]	5	0	3	32	0	0	0	520	13	10	336	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	645	0	14	27	72	0	0	440	264
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	0	3	677	0	14	27	592	13	10	776	264
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	1	169	0	4	7	148	3	3	194	66
Total Analysis Volume [veh/h]	5	0	3	677	0	14	27	592	13	10	776	264
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	125
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	5	10	0	5	10	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	97	0	0	97	0	9	19	0	9	19	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	20.0	0.0	0.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	67	67	67	67	67	67	67	67	67
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	30	30	30	2	24	24	1	23	23
g / C, Green / Cycle	0.45	0.45	0.45	0.03	0.36	0.36	0.01	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.11	0.58	0.01	0.02	0.16	0.16	0.01	0.29	0.29
s, saturation flow rate [veh/h]	76	1173	1589	1781	1870	1856	1781	1870	1710
c, Capacity [veh/h]	121	632	711	55	673	668	24	641	586
d1, Uniform Delay [s]	16.45	21.10	10.32	31.98	16.40	16.40	32.79	20.40	20.40
k, delay calibration	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.19	0.19
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.23	56.21	0.01	6.79	0.47	0.48	10.65	5.56	6.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.07	1.07	0.02	0.50	0.45	0.45	0.41	0.85	0.85
d, Delay for Lane Group [s/veh]	16.67	77.32	10.33	38.77	16.87	16.88	43.44	25.96	26.47
Lane Group LOS	B	F	B	D	B	B	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.07	19.80	0.11	0.52	3.36	3.34	0.23	8.14	7.53
50th-Percentile Queue Length [ft/ln]	1.79	495.07	2.66	12.95	83.99	83.47	5.69	203.54	188.28
95th-Percentile Queue Length [veh/ln]	0.13	28.45	0.19	0.93	6.05	6.01	0.41	12.82	12.03
95th-Percentile Queue Length [ft/ln]	3.22	711.36	4.78	23.31	151.18	150.24	10.24	320.53	300.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	16.67	16.67	16.67	77.32	77.32	10.33	38.77	16.88	16.88	43.44	26.12	26.47
Movement LOS	B	B	B	F	E	B	D	B	B	D	C	C
d_A, Approach Delay [s/veh]	16.67			75.96			17.81			26.37		
Approach LOS	B			E			B			C		
d_I, Intersection Delay [s/veh]	38.46											
Intersection LOS	D											
Intersection V/C	1.076											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	25.06	25.06	25.06	25.06
l_p,int, Pedestrian LOS Score for Intersection	1.716	2.246	2.572	3.702
Crosswalk LOS	A	B	B	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	2780	2780	448	448
d_b, Bicycle Delay [s]	5.08	5.08	20.14	20.14
l_b,int, Bicycle LOS Score for Intersection	1.573	2.700	2.081	2.426
Bicycle LOS	A	B	B	B

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 66: Shirk Street and South Commercial Driveway (Site Access B)

Control Type:	Two-way stop	Delay (sec / veh):	15.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.024

Intersection Setup

Name	Shirk Street		Shirk Street		South Commercial Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Shirk Street		Shirk Street		South Commercial Driveway	
Base Volume Input [veh/h]	378	0	0	435	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	385	270	0	224	0	8
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	763	270	0	659	0	8
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	191	68	0	165	0	2
Total Analysis Volume [veh/h]	763	270	0	659	0	8
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	15.91
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.07
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	1.81
d_A, Approach Delay [s/veh]	0.00		0.00		15.91	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.07					
Intersection LOS	C					

Intersection Level Of Service Report

Intersection 67: East Commercial Driveway and Riggin Avenue (SIte Access D)

Control Type:	Two-way stop	Delay (sec / veh):	12.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.257

Intersection Setup

Name	East Commercial Driveway		Riggin Avenue		Riggin Avenue	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	East Commercial Driveway		Riggin Avenue		Riggin Avenue	
Base Volume Input [veh/h]	0	0	0	443	278	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	162	0	99	251	202
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	162	0	542	529	202
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	41	0	136	132	51
Total Analysis Volume [veh/h]	0	162	0	542	529	202
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.26	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	12.66	0.00	0.00	0.00	0.00
Movement LOS		B		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	1.02	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	25.44	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.66		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.43					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 78: West Commercial Driveway and Riggin Avenue (Site Access C)

Control Type:	Two-way stop	Delay (sec / veh):	13.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.340

Intersection Setup

Name	West Commercial Driveway		Riggin Avenue		Riggin Avenue	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	West Commercial Driveway		Riggin Avenue		Riggin Avenue	
Base Volume Input [veh/h]	0	0	0	443	278	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	221	0	99	316	97
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	221	0	542	594	97
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	55	0	136	149	24
Total Analysis Volume [veh/h]	0	221	0	542	594	97
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.34	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	13.35	0.00	0.00	0.00	0.00
Movement LOS		B		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	1.50	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	37.54	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.35		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	2.03					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 79: Shirk Street and North Commercial Driveway (Site Access A)

Control Type:	Two-way stop	Delay (sec / veh):	10.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name	Shirk Street		Shirk Street		North Commercial Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Shirk Street		Shirk Street		North Commercial Driveway	
Base Volume Input [veh/h]	378	0	0	445	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	88	0	28	0	9
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	394	88	0	473	0	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	99	22	0	118	0	2
Total Analysis Volume [veh/h]	394	88	0	473	0	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.33	0.00	0.00	10.90
Movement LOS	A	A	A	A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	1.11
d_A, Approach Delay [s/veh]	0.00		0.00		10.90	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.10					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 80: Shirk Street and Central Access Driveway (Site Access F)

Control Type:	Signalized	Delay (sec / veh):	9.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.634

Intersection Setup

Name	Shirk Street		Shirk Street		Central Access Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Shirk Street		Shirk Street		Central Access Driveway	
Base Volume Input [veh/h]	378	0	0	445	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	97	296	28	0	224	7
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	475	296	28	445	224	7
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	119	74	7	111	56	2
Total Analysis Volume [veh/h]	475	296	28	445	224	7
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	10	0	0	10	5	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	16	0	0	16	44	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	7	0	0	10	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	0.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C
C, Cycle Length [s]	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00
g_i, Effective Green Time [s]	42	42	10
g / C, Green / Cycle	0.70	0.70	0.17
(v / s)_i Volume / Saturation Flow Rate	0.44	0.26	0.13
s, saturation flow rate [veh/h]	1751	1786	1774
c, Capacity [veh/h]	1223	1311	299
d1, Uniform Delay [s]	4.89	3.66	23.89
k, delay calibration	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00
d2, Incremental Delay [s]	2.47	0.77	4.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.36	0.77
d, Delay for Lane Group [s/veh]	7.36	4.44	28.11
Lane Group LOS	A	A	C
Critical Lane Group	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	3.77	1.63	3.28
50th-Percentile Queue Length [ft/ln]	94.28	40.72	81.88
95th-Percentile Queue Length [veh/ln]	6.79	2.93	5.90
95th-Percentile Queue Length [ft/ln]	169.71	73.30	147.38

Movement, Approach, & Intersection Results

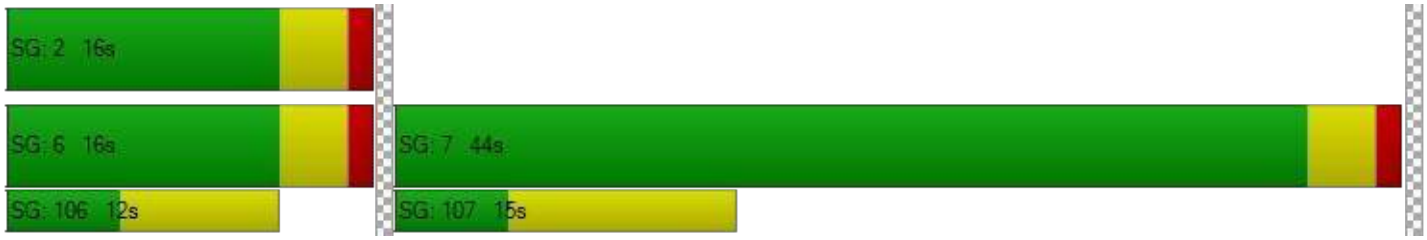
d_M, Delay for Movement [s/veh]	7.36	7.36	4.44	4.44	28.11	28.11
Movement LOS	A	A	A	A	C	C
d_A, Approach Delay [s/veh]	7.36		4.44		28.11	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	9.67					
Intersection LOS	A					
Intersection V/C	0.634					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.71	21.71	21.71
l_p,int, Pedestrian LOS Score for Intersection	2.398	2.161	2.006
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	400	1332
d_b, Bicycle Delay [s]	19.23	19.23	3.35
l_b,int, Bicycle LOS Score for Intersection	2.832	2.340	1.941
Bicycle LOS	C	B	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 81: Denton Street and Site Access E

Control Type:	Two-way stop	Delay (sec / veh):	22.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name	Denton Street			Denton Street			Site Access E			Site Access E		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Denton Street			Denton Street			Site Access E			Site Access E		
Base Volume Input [veh/h]	0	29	0	0	32	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	291	0	0	0	0	1	3	0	659	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	291	29	0	0	32	1	3	0	659	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	73	7	0	0	8	0	1	0	165	0	0	0
Total Analysis Volume [veh/h]	291	29	0	0	32	1	3	0	659	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.18	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.63	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.71	0.00	0.00	7.27	0.00	0.00	22.52	22.36	14.51	57.14	16.32	8.44
Movement LOS	A	A	A	A	A	A	C	C	B	F	C	A
95th-Percentile Queue Length [veh/ln]	0.61	0.61	0.61	0.00	0.00	0.00	4.88	4.88	4.88	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	15.35	15.35	15.35	0.00	0.00	0.00	121.88	121.88	121.88	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	7.01			0.00			14.55			27.30		
Approach LOS	A			A			B			D		
d_I, Intersection Delay [s/veh]	11.70											
Intersection LOS	C											

Appendix F – Coordination with Shirk-Riggin Industrial Park

MEETING MINUTES

June 8, 2023	Project# 27808
Project Name:	Visalia Costco Warehouse
Meeting Location:	Virtual
Submitted by: Grace Carsky, Amy Lopez	
Subject: Visalia Costco and Shirk/Riggin Industrial Park Coordination Meeting	
Attendees:	Leslie Blair – City of Visalia Nick Mascia – City of Visalia Amy Lopez – Kittelson & Associates, Inc. (Costco) Grace Carsky – Kittelson & Associates, Inc. (Costco) Pari Holliday – Costco Justin Becker – Kimley Horn (Costco) Joseph Welch – MG2 (Costco) Joe Shultz – Kimley Horn (Shirk/Riggin Industrial Park) Matt Zipagan – Kimley Horn (Shirk/Riggin Industrial Park) Jonathan Frausto – 4 Creeks (Shirk/Riggin Industrial Park)

- Purpose of meeting was to bring together the Costco and Shirk/Riggin Industrial Park consultant teams to discuss the Shirk Street access driveways.
    a. The City of Visalia would like to see the two access driveways aligned on Shirk Street.
    b. The Costco and Industrial Park access driveways are currently proposed 50 feet offset from each other (Costco driveway 50 feet north of Industrial Park driveway)
- Costco access driveway – approximately 660 feet north of the Shirk St/Riggin Ave signal
- Industrial Park access driveway – traffic is based off the Clancy intersections
    a. Question – will a signal at the proposed access interfere with deceleration lanes and storage lanes along Shirk St?
    b. Question – will the proposed access interfere with southbound turn lanes at Shirk and Riggin?
- Action items
    a. Costco and Industrial Park teams to share CAD line work of site plans with each other
    b. Costco and Industrial Park teams to share traffic analysis volumes with each other

- July 18th, 2023 – Costco and Seefried (Shirk/Riggin Industrial Park) agreed to aligning the access driveways on Shirk Street and removing the southbound left-turn lane from the Shirk Street/Sedona Avenue intersection.

Exhibit "I"

KITTELSON & ASSOCIATES
155 Grand Avenue, Suite 505
Oakland, CA 94612
P 510.839.1742

Technical Memorandum

May 23, 2024 Project# 27808

To: Sean Anderson, Costco Wholesale
Costco Wholesale
730 Lake Drive Issaquah, WA, 98027

From: Amy Lopez, Mingmin Liu, Michael Ruiz-Leon

RE: Visalia Costco Warehouse Queue Management Plan

This memorandum documents a queue management plan concept for implementation as needed at the proposed Visalia Costco fuel station. For purposes of this plan, queue management is expected to involve three Costco fuel station employees depending on the preference of the operator, to manage the location where members line up to wait for an available fueling position and manage the space between vehicles. If needed one Costco car wash employee can also be assigned to manage queues. Figure 1 illustrates the queue management plan components, including:

Fuel Station

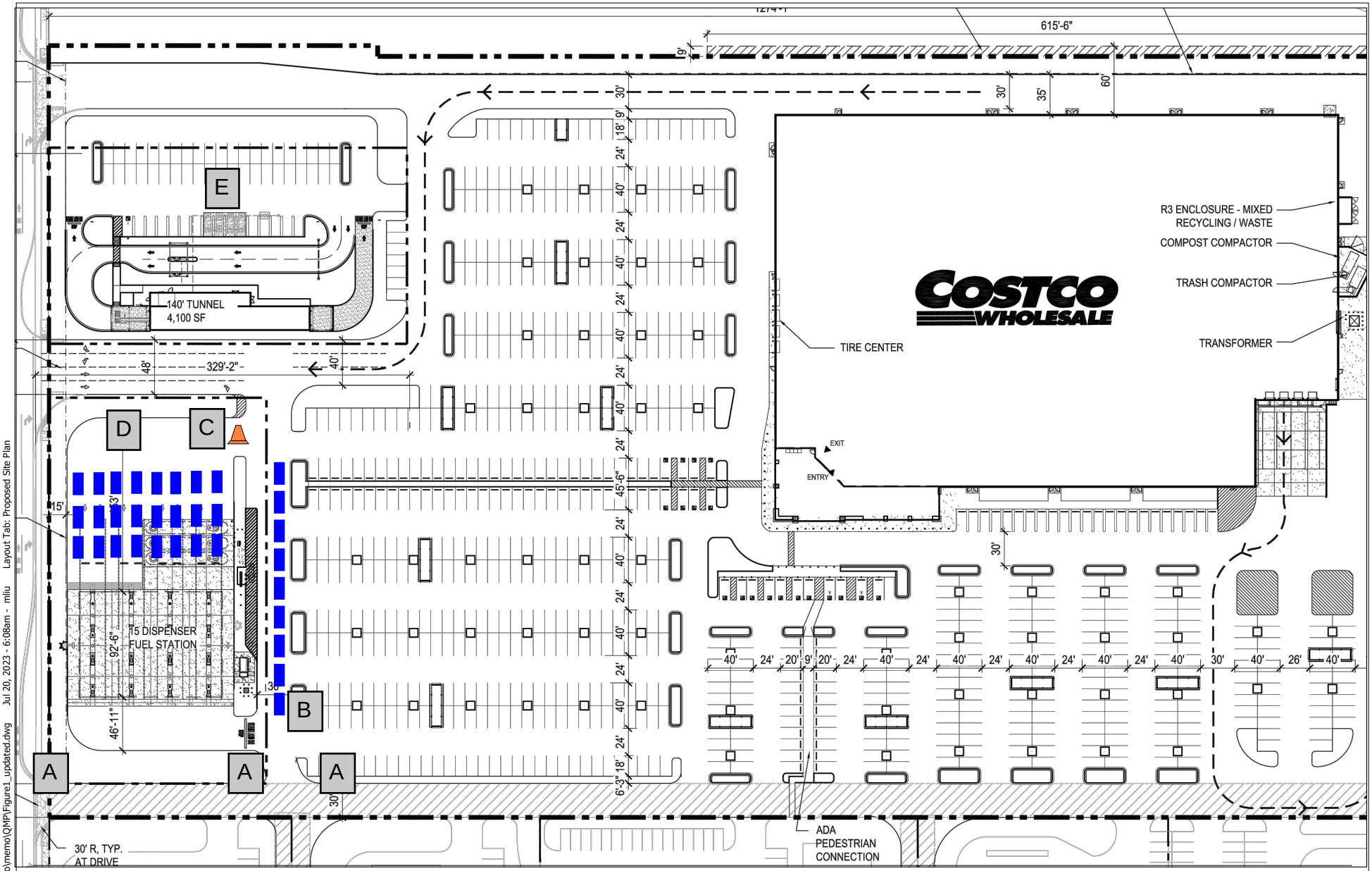
- Place temporary sign "**ENTER HERE FOR COSTCO GAS**." with right-turn or left-turn arrow (as appropriate) at "A" indicated in the figure.
- Place temporary sign "**CONTINUE FOR GAS**." with a through arrow at "B" indicated in the figure.
- A trained Costco fuel station employee should be assigned at the fuel station entry area ("C" in the figure) to monitor access to the fuel station and ensure members do not attempt to cut in line in this area.
    - The employee should use an orange cone in the fuel station entrance to restrict access until the queue storage area behind the pumps has room for another vehicle to enter.
    - When the queue storage area can handle another vehicle, the employee should remove the orange cone and direct one vehicle from the queue in the parking aisle to enter the fuel station area.
    - The employee should reroute any vehicle trying to enter the fuel station by approaching from anywhere other than the on-site queue storage indicated in the figure.
- A second trained employee should be assigned to the queue storage area behind the pumps, indicated as "D" in the figure.
    - This employee is generally expected to guide and direct members within the queue storage area to the shortest queue and actively manage the spacing between vehicles.
    - The employee should encourage members to pull forward so that they do not leave large gaps between their front bumper and the vehicle ahead of them, to the extent safe and practical.
    - The employee should exercise caution in conducting their work, particularly avoiding walking between moving vehicles or in spaces where they could otherwise become trapped.

Car Wash

The car wash drive aisle as shown in Figure 1 has two one-way lanes leading to the car wash which transitions into one lane right before the car wash tunnel. Based on Costco's experience, queueing at a car wash is minimal given the efficiency and processing power of the car wash tunnel. If queueing exceeds the lane storage, the queue would be accommodated within the parking lot at the car wash. Approximately 26 vehicles can fit within this queue storage area around the car wash parking lot.

- A third trained employee, if needed, could be assigned to the car wash area indicated as "E" in the figure near the entrance of the car wash to direct cars to loop around the parking lot if the queue exceeds the available storage.

These are conceptual suggestions for Costco staff to review, refine, and implement based on local experience and their experience through implementation. If you have any questions or require any additional information, please contact Amy Lopez at alopez@kittelson.com or 510-433-8064.



Traffic Cone

Passenger Vehicle

Queue Management Plan
Visalia, CA

Figure
1

KITTELSON & ASSOCIATES

H:\27\27808 - Visalia Costco\memo\QMP\Figure1_updated.dwg Jul 20, 2023 - 6:08am - miiu Layout Tab: Proposed Site Plan

Exhibit "J"

Environmental Noise Impact Study

COSTCO WHOLESALE WAREHOUSE PROJECT
CARLETON ACRES
VISALIA, CALIFORNIA

Prepared for:
Costco Wholesale

May 2024

Report Ref:
R2023124.2

Prepared by:
Acoustical Engineering Services, Inc.
515 South Flower Street, 18th Floor
Los Angeles, CA 90071

Table of Content

Executive summary 1
Findings 1
1 Introduction 4
1.1 Project Description 4
1.2 Project Differences from Specific Plan EIR 4
2 Environmental Setting 7
2.1 Fundamentals of Sound and Environmental Noise 7
2.1.1 Outdoor Sound Propagation 7
2.1.2 Environmental Noise Descriptors 9
2.2 Ground-borne Vibration 10
2.3 Applicable Noise Standards 10
2.3.1 City of Visalia General Plan Noise Element 11
2.3.2 City of Visalia Municipal Code 12
2.4 Applicable Vibration Standards 14
2.5 Existing Ambient Noise Levels 15
3 Impact Analysis 20
3.1 Methodology 20
3.1.1 Construction Noise 20
3.1.2 Construction Vibration 20
3.1.3 Operational Noise 20
3.2 Significance Thresholds 21
3.2.1 Construction Noise 22
3.2.2 Construction Vibration 22
3.2.3 Operations Noise 22
3.3 Project Design Features 23
3.4 Construction Noise Impacts 24
3.5 Construction Vibration Impacts 27
3.6 Operation Impacts 28
3.6.1 Mechanical 29
3.6.2 Loading Dock Operation 29
3.6.3 Warehouse Delivery Trucks 30
3.6.4 Trash Compactors 31
3.6.5 Parking Lot Operation 32
3.6.6 Parking Lot Cleaning 33
3.6.7 Tire Installation Center 33
3.6.8 Fuel Dispensers and Vehicle Queueing 34
3.6.9 Fuel Delivery Trucks 35
3.6.10 Car Wash 36
3.6.11 Composite On-Site Operational Noise Levels 37
3.6.12 Off-Site Traffic 39
4 Mitigation Measures 41
4.1 Construction Noise 41
4.2 Construction Vibration 41

4.3 Operational Noise 41
5 Level of Significance after mitigation 42
5.1 Construction Noise 42
5.2 Construction Vibration 42
5.3 Operation Noise 42

List of Figures

Figure 1. Project Site Plan and Context Map 6
Figure 2. Noise Receptor Locations – Existing Condition (Construction Analysis) 17
Figure 3. Noise Receptor Locations –Future Condition (Operations Analysis) 18

List of Tables

Table 1. Typical Noise Levels 8
Table 2. Transportation Noise Sources 11
Table 3. Stationary Noise Sources 11
Table 4. Exterior Noise Level Standards, dBA 13
Table 5. FTA Construction Vibration Impact Criteria for Building Damage 14
Table 6. FTA Construction Vibration Impact Criteria for Human Annoyance 15
Table 7. Description of Noise Receptor Locations 16
Table 8. Existing Ambient Noise Levels 19
Table 9. Typical Construction Equipment Noise Emission Levels and Usage Factors 25
Table 10. On-Site Construction Noise Impacts 26
Table 11. Construction Equipment Vibration Levels 27
Table 12. Construction Vibration Impacts – Building Damage 28
Table 13. Construction Vibration Impacts – Human Annoyance 28
Table 14. Mechanical Noise Levels 29
Table 15. Loading Dock Operation Noise Levels 30
Table 16. Warehouse Delivery Truck Noise Levels 30
Table 17. Trash compactors Operation Noise Levels 32
Table 18. Parking Lot Operation Noise Levels 32
Table 19. Parking Lot Cleaning Noise Levels 33
Table 20. Tire Installation Center Noise Levels 34
Table 21. Fuel Dispensers and Vehicle Queueing Noise Levels 35
Table 22. Fuel Delivery Truck Noise Levels 35
Table 23. Car Wash Noise Levels 36
Table 24. Composite On-Site Operational Noise Impacts – Daytime Hours 38
Table 25. Composite On-Site Operational Noise Impacts – Nighttime Hours 38
Table 26. Off-Site Traffic Noise Impacts 40

Appendices

Appendix A: Ambient Noise Measurements
Appendix B: Construction Noise and Vibration Calculations Worksheets
Appendix C: Operation Noise Calculations Worksheets

EXECUTIVE SUMMARY

In 2023, the City of Visalia (City) certified the Carleton Acres Specific Plan EIR (Specific Plan EIR) and adopted the Carleton Acres Specific Plan. This Noise Impact Study (Study) evaluates the potential noise and vibration impacts from the construction and operation of the Costco Wholesale Warehouse, Fuel Facility, and Carwash (Costco or Project), located within the southwest corner of the Carleton Acres Specific Plan, north of Riggin Avenue and east of Shirk Street (Project Site) in the City.

Findings

In order to analyze the potential noise impacts of Project construction and operations, the existing ambient noise environment at the three selected sensitive noise receptors (identified as R1 through R3 depicted on Figure 3 (on page 18)) in the vicinity of the Project Site were measured and tabulated in this report. The measured ambient sound data were utilized as baseline noise levels, and in conjunction with the applicable standards and guidelines, was used to define the Project noise impact thresholds. All technical terms, including levels of significance are explained in the body of this report.

The key findings of the report, all as more fully described later in this Study, are as follows:

Construction Noise Impacts

- The estimated noise level from the Project on-site temporary construction activities at the nearest off-site sensitive receptor (represented by receptor R1) of up to 60.3 dBA L_{eq} would be well below both the existing ambient noise levels (71.2 dBA L_{eq}) and the Project significance threshold (81.2 dBA L_{eq}). Therefore, noise impacts associated with the on-site construction activities would be less than significant.

Construction Vibration Impacts

- The estimated vibration levels from Project on-site temporary construction activities would be below the significance threshold for building damage at the nearest off-site buildings to the south (existing residential buildings on the south side of Riggin Avenue). Therefore, temporary vibration impacts associated with Project on-site construction activities would be less than significant.

- The estimated vibration levels from the Project's on-site temporary construction activities at the nearest off-site sensitive receptor (receptor R1) of up to 59 VdB would be well below the 80 VdB significance threshold as applicable to human annoyance criteria. Therefore, vibration impacts associated with the on-site construction activities would be less than significant.

Operational Noise Impacts

- Noise levels associated with the Project operation including, on-site mechanical equipment, loading dock, warehouse delivery trucks, trash compactors, parking lot operation, tire center, carwash, and fuel station operation; and off-site traffic would be below the significance thresholds.

- A composite operational noise analysis was performed to evaluate the noise impacts from all Project-related on-site noise sources (concurrent operation), including mechanical equipment, loading dock operation, warehouse delivery trucks, trash compactors, parking lot operation, tire center, carwash, and fuel station operation, representing a worst-case noise scenario. As indicated in Table 24 (on page 38), the estimated daytime composite noise levels due to the Project would range from 48.3 dBA (L_{eq}) at receptor R1 to 51.2 dBA (L_{eq}) at receptor R3, which would be below the daytime significance threshold. As indicated in Table 25, the estimated nighttime composite noise levels due to the Project would range from 41.0 dBA (L_{eq}) at receptor R3 to 44.8 dBA (L_{eq}) at receptor R1, which would be below the Project nighttime significance threshold. Therefore, the composite noise level impacts due to Project operation would be less than significant.

- In addition, a noise analysis was conducted to evaluate the potential sleep disturbance associated with the warehouse and fuel delivery trucks nighttime operation. The potential sleep disturbance was analyzed using the Sound Exposure Level (SEL) metric. The estimated SEL due to a delivery truck would range from 66.3 dBA SEL at the exterior of receptor R3 (nearest future residence to the north) to 79.4 dBA SEL at the exterior of receptor R1 (nearest existing residence to the south). As analyzed, the estimated SEL levels at the off-site noise-sensitive receptors would be well below the 94 dBA SEL exterior noise limits. In addition, the estimated SEL at the interior of the nearest future residences, with the window opens (worst-case noise transmission scenario) would be approximately 53.3 (future residences to the north) to 66.4 dBA SEL (existing residences to the south), which would be below the 81 dBA SEL interior noise limits.

- The Project off-site traffic would result in a maximum noise increase of 2.8 dBA and 1.9 dBA CNEL (relative to the "future without project" conditions) along the Shirk Street (between Sedona Avenue and Riggin Avenue), under Phase 1 and Phase 2, respectively. The estimated noise increases would be below the 3 dBA significance threshold. Therefore, the off-site traffic noise impacts associated with the Project would be less than significant.

Conclusions

The Specific Plan EIR and the Acoustical Analysis – Carleton Acres Specific Plan (March 2023) prepared by WJV Acoustics, which is incorporated as Appendix I to the Specific Plan EIR (Specific Plan Acoustical Analysis), concluded that development and operation of the uses allowed under the Carleton Acres Specific Plan would result in less than significant noise impacts with the incorporation of mitigation. Consistent with those results, this Study demonstrates that the noise and vibration impacts associated with the construction and operation of the Project would be less than significant. the proposed Project's construction and operation activities would not result in new or more severe noise impacts than were analyzed in the Specific Plan EIR.

1 INTRODUCTION

In 2023, the City of Visalia (City) certified the Carleton Acres Specific Plan EIR (Specific Plan EIR) and adopted the Carleton Acres Specific Plan.[1] In addition, the City adopted an Mitigation Monitoring and Reporting Program (MMRP) and findings to comply with CEQA requirements.

The Project Site is located in the Mixed-Use Commercial Zone in the southeast portion of the Carleton Acres Specific Plan. In accordance with Specific Plan EIR Mitigation Measure NOI-1, this Noise Impact Study (Study) evaluates the potential noise and vibration impacts from the construction and operation of the Costco Wholesale Warehouse, Fuel Facility, and Carwash (Costco), located north of Riggin Avenue and east of Shirk Street in the City of Visalia (City), California (Project), as shown in Figure 1 (on page 6).

1.1 Project Description

The Project includes a 159,212 square-feet new Costco Warehouse building, fuel station, and carwash, with on-site circulation and landscaping improvements.

The objectives of this Study are to:

a) Describe differences between the Project and the uses analyzed in the Specific Plan EIR and the Acoustical Analysis – Carleton Acres Specific Plan (March 2023) prepared by WJV Acoustics, which is incorporated as Appendix I to the Specific Plan EIR (Specific Plan Acoustical Analysis),

b) Evaluate the Project's construction-related noise and vibration impacts on noise-sensitive uses in the vicinity of the Project Site,

c) Determine potential noise impacts on existing off-site noise-sensitive uses from Project operation-related noise sources, on-site stationary and off-site mobile noise sources, and

d) Identify Project Design Features (PDF) that avoid or reduce the potential noise impacts.

1.2 Project Differences from Specific Plan EIR

When the City certified the Specific Plan EIR, the analysis assumed development of a Costco Warehouse, Fuel Facility, and Carwash, which uses are included in the Project. However, the site plan analyzed in the Specific Plan EIR showed the carwash as being oriented north-south,

[1] *City of Visalia, Carleton Acres Specific Plan, Final Environmental Impact Report, August 2023.*

with the opening of the carwash tunnel located approximately 115 feet from the northern Project Site boundary.

The Project's current site plan, shown in Figure 1, has reoriented the uses as compared to the site plan analyzed in the Specific Plan EIR. In the current site plan, the carwash is reoriented 90 degrees, along an east-west axis. Accordingly, the carwash tunnel is now located more than 200 feet from the northern Project Site boundary. In addition, the Project's current site plan includes a 7'4" sound wall along the Project Site's northern boundary, which would shield uses to the north from carwash noise.

Section 3 of this Study analyzes the effects of these modifications and demonstrates that the Project would not result in any new or more severe impacts as compared to the Specific Plan EIR's analysis.



Source: Google Map, 2023

Figure 1. Project Site Plan and Context Map

2 ENVIRONMENTAL SETTING

2.1 Fundamentals of Sound and Environmental Noise

Noise is commonly defined as sound that is undesirable because it can interfere with speech communication and hearing, may cause sleep disturbance, or may otherwise be considered annoying (unwanted sound). The decibel (dB) is a conventional unit for measuring the amplitude of sound because it accounts for the large variations in sound pressure amplitude and reflects the way people perceive changes in sound amplitude.[2] The human hearing system is not equally sensitive to sound at all frequencies. Therefore, to approximate this human frequency-dependent response, the A-weighted filtering system is used to adjust measured sound levels (dBA). The term "A-weighted" refers to filtering the noise signal in a manner that corresponds to the way the human ear perceives sound. Examples of various sound sources and decibel levels in outdoor and indoor environments are provided in Table 1 (on page 8).

Generally, people judge the relative magnitude of sound sensation by subjective terms such as "loudness" or "noisiness." To the normal human ear, a change in sound level of 3 dB is considered "just perceptible," a change in sound level of 5 dB is considered "clearly noticeable," and a change (i.e., increase) of 10 dB is generally recognized as "twice as loud."[3]

2.1.1 Outdoor Sound Propagation

In an outdoor environment, sound levels attenuate (reduce) through the air as a function of distance. Such attenuation is commonly referred to as "distance loss" or "geometric spreading," and is based on the noise source configuration (e.g., point source, or line source). For a point source, such as the fuel pump the rate of sound dissipation is about 6 dB per doubling of distance from the noise source. For example, a fuel pump generates a sound level of 66 dBA at a distance of three feet would attenuate to 60 dBA at a distance of six feet. For a line source, such as a constant flow of auto traffic on a roadway, the rate of sound attenuation is about 3 dB per doubling of distance.[4]

In addition, structures (e.g., buildings, parapet walls) and natural topography (e.g., hills) that obstruct the acoustic line-of-sight between a noise source and a receptor further reduce the noise level if the receptor is located within the "acoustic shadow" of the obstruction, such as behind a sound wall. This type of sound attenuation is known as "barrier insertion loss." If a receptor is located behind the wall but still has a view of the source (i.e., acoustic line-of-

---

[2] *All sound levels measured in decibel (dB) in this study are relative to $2x10^{-5}$ N/m^2.*

[3] *Engineering Noise Control, Bies & Hansen, 1988.*

[4] *Caltrans, "Technical Noise Supplement (TeNS)", 2013.*

sight is not fully blocked), some barrier insertion loss would still occur, however to a lesser extent. Additionally, a receptor located on the same side of the wall as a noise source may experience an increase in the perceived noise level as the wall reflects noise back to the receptor, thereby compounding the noise. Outdoor sound walls can provide noise level reductions ranging from approximately 5 dBA (where the barrier just breaks the acoustic line-of-sight between the noise source and receiver) to an upper range of 20 dBA with a more substantial barrier.[5]

Table 1. Typical Noise Levels

Common Outdoor Activities	Noise Levels, dBA	Common Indoor Activities
	110	Rock Band
Jet Fly-over at 1000 feet		
	100	
Gas Lawn Mower at 3 feet		
	90	
Diesel Truck at 50 feet at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
Gas Lawn Mower at 100 feet	**70**	Vacuum Cleaner at 10 feet
Commercial Area		Normal Speech at 3 feet
Heavy Traffic at 300 feet	**60**	
		Large Business Office
Quiet Urban Daytime	**50**	Dishwasher Next Room
Quiet Urban Nighttime	**40**	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio (background)
	10	
Lowest Threshold of Human Hearing	**0**	Lowest Threshold of Human Hearing
Source: Caltrans, Technical Noise Supplement (TeNS), 2013		

[5] *Caltrans, "Technical Noise Supplement (TeNS)", 2013.*

2.1.2 Environmental Noise Descriptors

Several rating scales have been developed to analyze the adverse effect of community noise on people. Since environmental noise fluctuates over time, these scales consider the total acoustical energy content, as well as the time and duration of occurrence. The most frequently used noise descriptors, including those used by the City of Visalia, are summarized below.

Equivalent Sound Level (L_{eq}). L_{eq} is a measurement of the acoustic energy content of noise averaged over a specified period. Thus, the L_{eq} of a time-varying sound and that of a steady sound are the same if they deliver the same amount of energy to the receptor's ear during exposure. L_{eq} for one-hour periods, during the daytime or nighttime hours, and 24 hours are commonly used in environmental noise assessments. L_{eq} can be measured for any period but is typically measured for an increment of no less than 15 minutes for environmental studies. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during day or night.

Maximum Sound Level (L_{max}). L_{max} represents the maximum sound level measured during a measurement period.

Statistical Sound Level (L_n). L_n is a statistical description of the sound level that is exceeded over some fraction of a given period of time. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time. Half the time the noise level exceeds this level and half the time the noise level is less than this level. L_{90} noise level represents the noise level that is exceeded 90 percent of the time and, for environmental noise, is representative of background ambient noise level.

Sound Exposure Level (SEL). SEL is an energy-based sum of the noise experienced during a single noise event, normalized to one second duration. SEL is typically used to evaluate potential noise effects on sleep disturbance.

Community Noise Equivalent Level (CNEL). CNEL is the time average of all A-weighted sound levels for a 24-hour period with a 10 dBA adjustment (upward) added to the sound levels that occur between the hours of 10:00 p.m. and 7:00 a.m. (nighttime), and a 5 dBA adjustment (upward) added to the sound levels which occur between the hours of 7:00 p.m. and 10:00 p.m. (evening). These penalties attempt to account for increased human sensitivity to noise during the nighttime and evening periods, particularly where sleep is the most probable activity. CNEL has been adopted by the State of California to define the community noise environment for development of the community noise element of a General

Plan and is also used by the City of Visalia for land use planning in the City's General Plan.[6] In addition, the General Plan also uses CNEL for transportation noise, and L_{eq} and L_{max} for stationary noise sources.

Day/Night Average Sound Level (DNL or L_{dn}). L_{dn} is the time average of all A-weighted sound levels for a 24-hour period, similar to the CNEL. L_{dn} includes a 10-dBA adjustment (upward) added to the sound levels that occur between the hours of 10:00 p.m. and 7:00 a.m. (nighttime). Unlike CNEL, L_{dn} does not include the 5-dBA adjustment (upward) to evening sound levels, which occur between the hours of 7:00 p.m. and 10:00 p.m. L_{dn} is typically within one dBA of CNEL, and the two measurements are often used interchangeably for the purposes of defining the community noise environment and measuring A-weighted sound levels for a 24-hour period.

2.2 Ground-borne Vibration

Vibration is commonly defined as an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. The peak particle velocity (PPV) or the root-mean square (RMS) velocity is usually used to describe vibration amplitudes. PPV is defined as the maximum instantaneous peak of the vibration signal and is typically used for evaluating potential building damage.[7] The RMS velocity is defined as the square-root of the average of the squared amplitude of the vibration signal and is typically more suitable for evaluating human response to ground-borne vibration.[8] The RMS vibration velocity level can be presented in inch per second or in VdB (a decibel unit referenced to 1 micro-inch per second).[9] Ground-borne vibration generated by man-made activities (e.g., road traffic, construction operations) typically weakens with greater horizontal distance away from the source of the vibration.

2.3 Applicable Noise Standards

Government agencies have established noise standards and guidelines to protect citizens from potential hearing damage and other adverse physiological and social effects associated with noise. The City of Visalia General Plan establishes exterior noise standards and guidelines for land use compatibility and includes a number of goals, objectives, and policies for land use planning purposes. The City also has regulations to control excessive and annoying noise, as

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6 *State of California, General Plan Guidelines, 2003. City of Visalia General Plan, Chapter 8 Safety and Noise Element, October 2014.*

7 *Vibration levels described in this report are in terms peak particle velocity level in the unit of inches per second.*

8 *Federal Transit Administration (FTA), "Transit Noise and Vibration Impact Assessment," Section 5.1, September 2018.*

9 *VdB (velocity level in decibel) = 20 x Log (V / V_{ref}), where V is the RMS velocity amplitude in micro-inch per second and V_{ref} is the reference velocity amplitude of $1x10^{-6}$ inch per second (1 micro-inch per second).*

set forth in the City of Visalia Municipal Code (VMC) Chapter 8.36. Standards and guidelines used in the Specific Plan EIR and that may be applicable to this Project are discussed below.

2.3.1 City of Visalia General Plan Noise Element

The overall purpose of the General Plan Noise Element is to guide policy makers in making land use determinations and in preparing noise ordinances that would limit exposure of citizens to excessive noise levels. Table 2(below) provide the City's noise standards for transportation noise sources.

Table 2. Transportation Noise Sources

Noise Sensitive Land Use	Outdoor-Activity Areas	Interior Spaces	
	L_{dn}/CNEL, dBA	L_{dn}/CNEL, dBA[2]	L_{eq}, dBA[3]
Residential	65	45	
Transient Lodging	65	45	
Hospitals, Nursing Homes	65	45	
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls	65	--	45
Office Buildings	--	--	45
Schools, Libraries, Museums	--	--	45

[1] *Outdoor activity areas generally include backyards of single-family residences and outdoor patios, decks or common recreation areas of multi-family developments.*

[2] *The CNEL is used for quantification of aircraft noise exposure as required by CAC Title 21.*

[3] *As determined for a typical worst-case hour during periods of use.*

Source: City of Visalia *General Plan Noise Element, Table* 8.3, October 2014.

Table 3 (below) provide the City's exterior noise standards for stationary noise sources.

Table 3. Stationary Noise Sources

Noise Descriptor	Daytime (7:00 a.m. – 10:00 p.m.)	Nighttime (10:00 p.m. – 7:00 a.m.)
Hourly Equivalent Sound Level (L_{eq}), dBA	50	45
Maximum Sound Level (L_{max}), dBA	70	65

Source: City of Visalia General Plan Noise Element, Table 8.4, October 2014.

The following Noise Element goals and policies are applicable to the Project:[10]

- **N-P-4**: Where new development of industrial, commercial or other noise generating land uses (including roadways, railroads, and airports) may result in noise levels that exceed the noise level exposure criteria established by Tables 8-2 and 8-3 (of the General Plan), require a noise study to determine impacts, and required developers to mitigate these impacts in conformance with Tables 8-2 and 8-3 (of the General Plan) as condition of permit approval through appropriate means.

  Noise mitigation measures may include but are not limited to:

  - *Screen and control noise sources, such as parking and loading facilities, outdoor activities, and mechanical equipment;*
  - *Increase setbacks for noise sources from adjacent dwellings;*
  - *Retain fences, walls, and landscaping that serve as noise buffers;*
  - *Use soundproofing materials and double glazed windows;*
  - *Use open spaces, building orientation and design, landscaping and running water to mask sounds; and*
  - *Control hours of operation, including deliveries and trash pickup to minimize noise impacts.*

  Alternative acoustical designs that achieve the prescribed noise level reduction may be approved, provided a qualified Acoustical Consultant submits information demonstrating that the alternative designs will achieve and maintain the specific targets for outdoor activity areas and interior spaces. As a last resort, developers may propose to construct noise walls along state highways and arterials when compatible with aesthetic concerns and neighborhood character. This would be a developer responsibility with no City funding.

2.3.2 City of Visalia Municipal Code

The following sections of the City of Visalia Municipal Code, partially or entirely, may be applicable to the Project:

8.36.040 Exterior Noise Standards – Fixed Noise Sources

A. It is unlawful for any person at any location within the city to create any noise, or to allow the creation of any noise, on property owned, leased, occupied or otherwise controlled by such person which causes the exterior noise level, when measured at the

[10] *City of Visalia General Plan, Chapter 8 Safety and Noise Element, October 2014.*

property line of any affected noise sensitive land use, to exceed any of the categorical noise level standards as set forth in the following table:

Table 4. Exterior Noise Level Standards, dBA

Category	Cumulative Number of Minutes in Any One-hour Period	Evening and Daytime (6 a.m. to 7 p.m.)	Nighttime (7 p.m. to 6 a.m.)
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65
Source: City of Visalia Municipal Code, Chapter 8.36.040.A.			

B. In the event the measured ambient noise level without the alleged offensive source in operation exceeds an applicable noise level standard in any category above, the applicable standard or standards shall be adjusted so as to equal the ambient noise level.

C. Each of the noise level standards specified above shall be reduced by five dB for pure tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.

D. If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level without the source can be measured, the noise level measured while the source is in operation shall be compared directly to the noise level standards. (Prior code § 5090.4.1)

8.36.050 Exterior Noise Standards – Mobile Noise Sources Prohibition Against Use

It is unlawful to operate any of the below-listed devices, appliances, equipment or vehicles on public or private property abutting noise sensitive land uses between the weekday hours of seven p.m. and six a.m., and between the weekend hours of seven p.m. and nine a.m.:

A. Power-assisted leaf blowers, lawn mowers, edgers or other power equipment used for the maintenance of property;

B. Vehicle equipment, which equipment is not expressly regulated by state or federal statute, such as car radios or sound amplification equipment which is audible more than twenty-five (25) feet from the exterior of the vehicle;

C. Construction equipment including jackhammers, portable generators, pneumatic equipment, trenchers, or other such equipment, except for emergency repair purposes as provided in Section 8.36.070.

8.36.070 Noise Sources Exemptions

The following activities shall be exempted from the provisions of this chapter:

A. Any mechanical device, apparatus or equipment used, related to, or connected with emergency activities or emergency work.

B. Noise sources associated with the collection of waste or garbage from commercially zoned or industrially zoned property by the city or its authorized franchisee.

C. Any activity to the extent regulation thereof has been preempted by state or federal law.

2.4 Applicable Vibration Standards

The City currently does not have any adopted standards, guidelines, or thresholds relative to ground-borne vibration. As such, available guidelines from the Federal Transit Administration (FTA) are utilized to assess impacts due to ground-borne vibration. The FTA has published a technical manual titled, "Transit Noise and Vibration Impacts Assessment," that provides ground-borne vibration impact criteria with respect to building damage during construction activities.[11] Table 5 (below) provides the vibration criteria (based on FTA) applicable to construction activities. According to FTA guidelines, a vibration criterion of 0.2 PPV should be considered as the significant impact level for non-engineered timber and masonry buildings. Structures or buildings constructed of reinforced concrete, steel, or timber, have a vibration damage criterion of 0.5 PPV, and structures that are extremely susceptible to vibration damage have a vibration damage criterion of 0.12 PPV, pursuant to the FTA guidelines.

Table 5. FTA Construction Vibration Impact Criteria for Building Damage

Building Category	Peak Particle Velocity (PPV), (in/sec)
I. Reinforced-concrete, steel or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12
Source: FTA, 2018	

In addition, the FTA guidance manual also provides vibration criteria for human annoyance for various uses. These criteria were established primarily for rapid transit (rail) projects and, as indicated in Table 6 (on page 15), are based on the frequency of vibration events. Specific criteria are provided for three land use categories: (1) Vibration Category 1—High

[11] *FTA, "Transit Noise and Vibration Impact Assessment," September 2018.*

Sensitivity; (2) Vibration Category 2—Residential; and (3) Vibration Category 3—Institutional.

Table 6. FTA Construction Vibration Impact Criteria for Human Annoyance

Land Use Category	Ground-Borne Vibration Impacts Levels (VdB)		
	Frequent Events[a]	Occasional Events[b]	Infrequent Events[c]
Category 1: Building where vibration would interfere with interior operations	65[d]	65[d]	65[d]
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime uses	75	78	83

[a] *"Frequent Events" are defined as more than 70 vibration events of the same source per day.*
[b] *"Occasional Events" are defined as between 30 and 70 vibration events of the same source per day.*
[c] *"Infrequent Events" are defined as fewer than 30 vibration events of the same source per day.*
[d] *This criterion limit is based on the levels that are acceptable for most moderately sensitive equipment such as optical microscopes.*
Source: FTA, 2018

2.5 Existing Ambient Noise Levels

Some land uses are considered more sensitive to intrusive noise than others based on the types of activities typically involved at the receptor location. Based on a review of the land uses in the Project area, the nearest noise sensitive uses are residences located along the south side of Riggin Avenue. In addition, there are proposed residential uses (medium density) north and east of the Project Site. A total of three noise sensitive receptor locations were selected to represent nearest existing and future noise sensitive uses surrounding the Project site. The locations of the three noise-sensitive receptors are identified as R1 through R3 in Figure 3 and Figure 3 (on pages 17 and 18). Descriptions of the noise receptor locations are provided in Table 7 (on page 16).

Table 7. Description of Noise Receptor Locations

Location	General Description of Measurements Locations	Approximate Distance to Project Site, Feet	Representing Nearby Land Uses
R1	Existing residential uses at the south side of Riggin Avenue, south of the Project Site	25	Residential
R2	Future residential uses, east of the Project Site	90	Residential (Future)
R3	Future residential use, north of the Project Site	Adjacent to	Residential (Future)
Source: AES, 2024			



Source: Google Earth Map, 2023

Figure 2. Noise Receptor Locations – Existing Condition (Construction Analysis)



Source: Google Earth Map, 2023

Figure 3. Noise Receptor Locations –Future Condition (Operations Analysis)

The ambient noise monitoring program was conducted using a Larson-Davis Model 870 Integrating/Logging Sound Level Meters, the sound level meter meets the minimum industry standard performance requirements for "Type 1" standard instruments as defined in the American National Standard Institute (ANSI) S1.4. Two 15-minute measurements, one during the daytime hours (between 10 a.m. and 12 p.m.) and another during the nighttime hours (between 11 p.m. and 1 a.m.), were conducted at the off-site receptor locations, on August 24, 2023.

Table 8 (on page 19) presents the measured ambient noise levels at the selected noise receptors located in the close vicinity of the Project site, in L_{eq} (average sound level). Based on field observation and the review of the measured sound data, the current ambient noise environment in the vicinity of the Project Site is controlled primarily by vehicular traffic on nearby roadways. As indicated in Table 8, the existing daytime ambient noise levels ranged from 45.9 dBA L_{eq} at receptor R2 to 71.2 dBA L_{eq} at receptor R1. The existing nighttime ambient noise levels ranged from 38.9 dBA L_{eq} at receptor R3 to 62.1 dBA L_{eq} at receptor R1. The existing ambient noise levels at receptors R2 and R3 are below the City's exterior noise standards, applicable to the residential development, of 50 dBA L_{eq} during the daytime hours and 45 dBA L_{eq} during the nighttime hours. The existing ambient noise levels at receptors R2 and R3 are relatively low, as these receptor locations are undeveloped and located further away from the main roadways. As indicated in Table 8, the existing daytime and nighttime ambient noise levels at the receptor R1 are above the City's exterior noise standards of 50 dBA and 45 dBA, respectively. Therefore, the measured ambient noise levels will be used as the exterior noise standards, per VMC Section 8.36.040.

Table 8. Existing Ambient Noise Levels

Location	Noise-Sensitive Land Use	Measured Ambient Noise Levels, dBA L_{eq}	
		Daytime Hours (between 10 a.m. and 12 p.m.)	Nighttime Hours (between 11 p.m. and 1 a.m.)
R1	Residential	71.2	62.1
R2	Residential (Future)	45.9	40.3
R3	Residential (Future)	51.8	38.9
Source: AES, 2024, See Appendix A for detail ambient noise measurements data.			

3 IMPACT ANALYSIS

3.1 Methodology

3.1.1 Construction Noise

Noise impacts due to on-site construction activities associated with the Project were evaluated by calculating the construction-related noise levels at representative sensitive receptor locations and comparing these estimated construction-related noise levels to the existing ambient noise levels (i.e., noise levels without construction noise from the Project). Construction noise associated with the Project was analyzed based on the Project's potential construction equipment inventory, construction durations, and construction schedule. The construction equipment noise levels are based on the published noise data (equipment source levels) by the FHWA "Roadway Construction Noise Model (FHWA 2006)." The on-site construction noise levels were calculated using SoundPLAN (version 8.2), a 3-dimensional computer noise prediction model, which calculates noise transference (propagation) using approved engineering procedures and incorporates national and international noise standards. This calculation tool is widely used by acoustical engineers as a noise modeling tool for environmental noise analysis.

3.1.2 Construction Vibration

Ground-borne vibration impacts due to the Project's construction activities were evaluated by identifying potential vibration sources (i.e., construction equipment), estimating the vibration levels at the potentially affected receptors (building structures), and comparing the Project's activities to the applicable vibration significance thresholds, as described below.

Vibration levels were calculated based on the FTA published standard vibration velocities for various construction equipment operations.[12] The vibration velocities were calculated based on a point source with standard distance propagation conditions, pursuant to FTA procedures. Construction of the Project would not use impact pile driving methods and as such, impact pile driving vibration is not included in this construction vibration analysis.

3.1.3 Operational Noise

On-site stationary point-source noise impacts were evaluated by (1) identifying the noise levels that would be generated by the Project's on-site noise sources, including; mechanical equipment, loading dock operations, warehouse delivery trucks, trash compactors, parking lot operations, tire center, fuel dispenser station, fuel delivery trucks, and carwash, (2) calculating the noise level from each noise source at surrounding sensitive receptor property line locations; and (3) comparing such noise levels to ambient noise levels to determine

[12] *FTA, "Transit Noise and Vibration Impact Assessment," Table 7-4, September 2018.*

significance. The on-site stationary noise sources were calculated using SoundPLAN (version 8.2), a 3-dimensional computer noise prediction model, which calculates noise transference (propagation) using approved engineering procedures and incorporates national and international noise standards. This calculation tool is widely used by acoustical engineers as a noise modeling tool for environmental noise analysis. In addition, the SoundPLAN utilizes the FHWA's TNM 2.5 (FHWA and Caltrans official traffic noise model) for traffic noise calculations (i.e., fuel delivery trucks).

Potential noise impacts due to Project-related off-site traffic were analyzed by calculating the increase in noise levels associated with the increase in traffic volumes. Noise levels along Shirk Street and Riggin Avenue, the main roadway with entrances to the Project Site, which would be exposed to highest Project-generated traffic volumes. Traffic noise levels were calculated using the Federal Highway Administration (FHWA) Traffic Noise Model (TNM) and traffic volume data from the traffic generation analysis prepared for the Project.[13] The TNM traffic noise prediction model calculates the hourly L_{eq} noise levels based on specific information including the hourly traffic volume, vehicle type mix, vehicle speed, and lateral distance between the noise receptor and the roadway. To calculate the 24-hour CNEL levels, the hourly L_{eq} levels were calculated during daytime hours (7:00 a.m. to 7:00 p.m.), evening hours (7:00 p.m. to 10:00 p.m.), and nighttime hours (10:00 p.m. to 7:00 a.m.). The traffic noise prediction model calculates the 24-hour CNEL noise levels based on specific information, including Average Daily Traffic (ADT); percentages of day, evening, and nighttime traffic volumes relative to ADT; vehicle speed; and distance between the noise receptor and the roadway. The calculated CNEL levels are conservatively calculated in front of the roadways and do not account for the presence of any physical sound barriers or intervening structures.

3.2 Significance Thresholds

In accordance with the State CEQA Guidelines Appendix G, the Project would have a significant impact related to noise if it would result in the:

Threshold (a): *Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies,*

Threshold (b): *Generation of excessive groundborne vibration or groundborne noise levels.*

Threshold (c): *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two*

[13] *Kittelson & Associates, Inc., Visalia Costco Warehouse Focused Traffic Study, August 7, 2023.*

miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

The Project significance thresholds are based on the City's General Plan and Municipal Codes as described above, and the significance thresholds established in the Specific Plan EIR.

3.2.1 Construction Noise

The City Municipal Code does not have quantitative noise limits as specifically applied to the construction-related noise. Therefore, in addition to the City's allowable construction noise hours, a significance threshold of 10 dBA above the ambient is used for on-site construction noise impacts analysis, pursuant to the CEQA Threshold (a). It should be noted that this is more conservative than the Specific Plan EIR, which only accounted for the first bullet below. Therefore, significant noise impacts would occur if any of the following occur:

- Project construction activities occur between the hours of 7:00 p.m. and 7:00 a.m. on Mondays through Saturdays, and no construction on Sundays and during city or federal observed holidays.
- Project construction activities would result in noise levels of 10 dBA L_{eq} greater than the measured ambient noise levels at noise-sensitive receptors.

3.2.2 Construction Vibration

- Project construction activities cause ground-borne vibration levels to exceed 0.2 PPV at the nearest off-site non-engineered timber and masonry building (applicable to existing residential uses south of Riggin Avenue).
- Project construction activities cause ground-borne vibration levels to exceed 0.5 PPV at the nearest off-site reinforced-concrete, steel or timber building (applicable to future commercial buildings to the south).
- Project construction activities cause ground-borne vibration levels to exceed 80 VdB at off-site sensitive uses, including residential uses.

3.2.3 Operations Noise

- The noise level generated by on-site stationary sources would exceed 50 dBA (L_{eq}) during the daytime hours (between 7:00 a.m. and 10:00 p.m.) and 45 dBA (L_{eq}) during the nighttime hours (between 10:00 p.m. and 7:00 a.m.).

- The noise level generated by off-site traffic would increase the existing CNEL ambient noise levels at noise sensitive uses by 3 dBA where the existing ambient noise level is less 60 dBA or more in the vicinity of any noise-sensitive uses.

3.3 Project Design Features

The Project design includes the following Project Design Features (PDF) to reduce the operational-related noise impacts.

PDF-1: A 7.3-foot-tall noise barrier will be provided along the northern side of the Project to block the acoustic line-of-sight between the Project's parking lot to the future residential uses to the north.

PDF-2: A 7.3-foot to 10-foot-tall noise barrier will be provided along the eastern side of the Project to block the acoustic line-of-sight between the Project's parking lot to the future residential uses to the east.

PDF-3: An 8-foot-tall noise barrier will be provided around the trash/compost compactors to block the acoustic line-of-sight between the Project's trash/compost compactors to the future residential uses to the east.

PDF-4: A 12-foot-tall noise barrier will be provided along the east side of the Project's loading dock to block the acoustic line-of-sight between the Project's loading dock to the future residential uses to the east.

PDF-5: Acoustics absorptive finishes will be provided at the interior walls of the loading dock and trash/compost trash compactors.

PDF-6: Car wash will implement an IDC 100 horsepower Predator Blower System running at 55 Hz.

Mitigation Measure NOI-3 in the Specific Plan EIR requires, "For the proposed drive-through car wash facility in the Mixed-Use Commercial Zone, the Project shall implement an IDC 100 horsepower Predator Blower System running at 55Hz with a 10' wall with AcoustiBlok lining. Evidence of compliance with this mitigation measure shall be provided to the City of Visalia prior to issuance of occupancy permits."

As discussed in Section 2.1 of this Study, the proposed drive-through carwash facility analyzed in the Specific Plan EIR was oriented north-south, with the opening approximately 115 feet from the northern property line. Accordingly, prior to mitigation, the EIR found that noise levels at sensitive receptors located north of the Project Site exceeded the City's noise thresholds. With incorporation of Mitigation Measure NOI-3, the EIR found that the impact would be less than significant.

To comply with the performance standard in Mitigation Measure NOI-3, the Project has reoriented the carwash 90 degrees, moving the opening more than 200 feet from the northern property line. Carwash noise would be shielded from both the car wash tunnel and a proposed 7'4" sound wall described in PDF-1. As described in PDF-6, the Project incorporates an IDC 100 horsepower Predator Blower System running at 55Hz.

3.4 Construction Noise Impacts

Noise impacts from Project construction activities would be a function of the noise generated by construction equipment, the location of the equipment, the timing and duration of the noise-generating construction activities, and the relative distance to noise-sensitive receptors. Construction activities for the Project would generally include demolition, site grading and excavation, building construction, and landscaping. Each stage of construction would involve the use of various types of construction equipment and would, therefore, have its own distinct noise characteristics. Site mass grading and excavation would require the use of graders, excavators, backhoes, compactors, and heavy-duty trucks. Building construction would involve the use of air compressors, cranes, concrete trucks, paving trucks, compactors, and delivery trucks. Landscaping would involve the use of backhoes and work trucks. Noise from construction equipment would generate both steady-state and episodic noise that could be heard within and adjacent to the Project Site.

Individual pieces of construction equipment that would be used for construction of the Project produce maximum noise levels of 75 dBA to 90 dBA at a reference distance of 50 feet from the noise source, as shown in Table 9 (on page 25). The construction equipment noise levels at 50 feet distance (Referenced Maximum Noise Levels) are based on the FHWA Roadway Construction Noise Model User's Guide (RCNM, 2006), which is a technical report containing actual measured noise data for construction equipment. These maximum noise levels would occur when equipment is operating under full power conditions (i.e., the equipment engine at maximum speed). However, equipment used on construction sites often operate under less than full power conditions, or part power. To more accurately characterize construction-period noise levels, the average (Hourly L_{eq}) noise level associated with each construction stage is calculated based on the quantity, type, and usage factors for each type of equipment that would be used during each construction stage.[14,15] These noise levels are typically associated with multiple pieces of equipment operating simultaneously.

[14] *Pursuant to the FHWA Roadway Construction Noise Model User's Guide, 2005, the usage factor is the percentage of time during a construction noise operation that a piece of construction is operating at full power.*

[15] *Construction noise levels are calculated in terms of hourly L_{eq} consistent with the City's exterior noise limits.*

Table 9. Typical Construction Equipment Noise Emission Levels and Usage Factors

Type of Equipment	Acoustical Usage Factor[a] (%)	Reference Maximum Noise Levels at 50 Feet,[b] L_{max} (dBA)
Backhoe	40	78
Concrete Mixer Truck	40	79
Concrete Pump	20	81
Concrete Saw	20	90
Crew Truck	40	75
Dozer	40	82
Dump Truck	40	76
Excavator	40	81
Man Lift	20	75
Grading Blade	40	84
Laser Screeds	50	81
Light Plants	50	73
Loader	40	79
Paving Equipment	50	77
Rollers	20	80
Scrapers	40	84
Street Sweeper	10	82
Trenching Machine	50	80
Water Truck	10	82

[a] *The usage factor is the estimated percentage of time during an 8-hour day that a piece of construction equipment is operating at full power.*

[b] *Construction equipment noise levels are based on the FHWA RCNM.*

Source: FHWA Roadway Construction Noise Model User's Guide, Table 1, 2006

Construction, generally, would start with the site grading/excavation, followed by foundation, building construction, finishing, and paving/landscaping. The Project is expected to be the first component of the Carleton Acres that would be develop and that the only nearby sensitive receptor that is reasonably foreseeable to be present during the Project construction period are the existing residential uses south of Riggin Avenue (represented by receptor R1). Therefore, construction noise impacts analysis is limited to receptor R1. Table 10 (on page 26) provides the estimated construction noise levels at the off-site noise sensitive receptor R1 by construction phase. To present a conservative noise impact analysis, the estimated noise levels were calculated with all pieces of construction equipment assumed to be operating simultaneously. As indicated in Table 10, the estimated construction noise levels would be below both the existing ambient noise levels and the Project significance threshold at existing off-site noise receptor R1. As such, noise impacts associated with the on-site construction activities would be less than significant.

Table 10. On-Site Construction Noise Impacts

Receptor Location	Estimated Construction Noise Levels by Phase, dBA (L_{eq})						Existing Ambient,[a] dBA (L_{eq})	Significance Threshold,[b] dBA (L_{eq})	Exceed over Significance Threshold	Sig. Impacts?
	Mass Grading	Site Utilities	Foundation (Slab)	Concrete	Building Construction	Paving				
R1	59.7	56.8	58.7	60.3	58.1	58.6	71.2	81.2	0.0	No

[a] *Measured daytime ambient or City's daytime exterior noise standard of 50 dBA, whichever is greater.*

[b] *Significance thresholds are equal to the measured daytime ambient or City's daytime exterior noise standard of 50 dBA, whichever is greater, plus 10 dBA.*

Source: AES, 2024.

3.5 Construction Vibration Impacts

Construction activities can generate varying degrees of ground vibration, depending on the construction procedures and the type of construction equipment used. The operation of construction equipment generates vibrations that travel through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site often varies, depending on soil type, ground strata, and construction characteristics of the receptor buildings.

With regard to potential building damage, the Project would generate ground-borne construction vibration forces during the site excavation/grading and foundation phases when heavy construction equipment, such as vibratory rollers, large bulldozers, and loaded trucks, would be used. The FTA has published standard vibration velocity levels for various construction equipment operations. Table 11 (below) presents the typical vibration levels at a reference distance of 25 feet for construction equipment anticipated to be used during Project construction. As described above, the Project is expected to be the first component of the Carleton Acres to be built. Therefore, vibration impacts with regard to both structures and human annoyance are evaluated at the nearest existing off-site residential buildings south of the Project Site (represented by receptor location R1).

Table 11. Construction Equipment Vibration Levels

Equipment	Equipment vibration Levels at 25 feet, (PPV/VdB)
Vibratory Rollers	0.210/94
Large Bulldozer (e.g., excavators, graders)	0.089/87
Loaded Trucks (e.g., haul trucks)	0.076/86
Small Bulldozer (e.g., backhoe)	0.003/58
Source: FTA, 2018	

Table 12 (on page 28) provides the estimated vibration levels (in terms of inch per second PPV) at the nearest off-site structures adjacent to the Project Site. To present a worst-case vibration impact analysis, the estimated vibration levels were calculated with the construction equipment assumed to be operating at the closest distance to the nearest off-site building structures. As indicated in Table 12, the estimated vibration velocity levels from all construction equipment would be below the building damage significance criteria at all off-site building structures. As such, on-site vibration impacts, pursuant to the significance criteria for building damage, during construction of the Project would be less than significant.

Table 12. Construction Vibration Impacts – Building Damage

Nearest Off-Site Building Structures[a]	Estimated Vibration Velocity Levels at the Nearest Off-Site Structures from the Project Construction Equipment,[b] inch/second (PPV)				Significance Threshold, inch/second (PPV)	Sig. Impacts?
	Vibratory Roller	Large Bulldozer	Loaded Trucks	Small Bulldozer		
Existing Residential buildings along the south side of Riggin Avenue, south of the Project Site	0.004	0.002	0.001	0.001	0.20[c]	No

[a] *Represents off-site building structures located nearest to the Project Site to the south. There are no existing buildings within 100 feet to the north, east, and west.*

[b] *Vibration levels calculated based on FTA reference vibration level at 25-foot distance.*

[c] *FTA criteria for non-engineered concrete and masonry buildings.*

Source: FTA, 2018; AES, 2024

Table 13 (below) presents the estimated vibration velocity levels (in terms of VdB) due to construction equipment at the off-site vibration sensitive receptors. To present a worst-case vibration analysis, the estimated vibration levels were calculated with the construction equipment assumed to be operating at the closest distance to the nearest existing off-site sensitive receptors. As indicated in Table 13, the estimated vibration levels due to on-site construction equipment would be below the significance threshold for human annoyance at the existing off-site receptor R1. As such, vibration impacts associated with the on-site construction activities would be less than significant.

Table 13. Construction Vibration Impacts – Human Annoyance

Off-Site Receptor Location	Estimated Vibration Velocity Levels at the Nearest Off-Site Sensitive Receptors from the Project Construction Equipment,[a] VdB				Significance Threshold, VdB	Sig. Impacts?
	Vibratory Roller[c]	Large Bulldozer[c]	Loaded Trucks[c]	Small Bulldozer[e]		
R1	59	52	51	23	80	No

[a] *Vibration levels calculated based on FTA reference vibration level at 25-foot distance.*

Source: FTA, 2018; AES, 2024.

3.6 Operation Impacts

Operation noise levels associated with the Project would include on-site mechanical equipment, loading dock operation, warehouse delivery trucks, trash compactors, parking lot operation, tire center, fuel station, and carwash operation, and off-site traffic noise.

3.6.1 Mechanical

The Project would include mechanical equipment (e.g., air ventilation equipment), which would be located at the roof level and/or placed within the building structure. Project-related outdoor mechanical equipment would be designed to comply with the City's exterior noise standards. Table 14 (on below) presents the estimated on-site mechanical equipment noise levels at the off-site receptor locations. As shown on Table 14, the estimated noise levels from the mechanical equipment would range from 30.5 dBA (L_{eq}) at receptor location R1 to 36.7 dBA (L_{eq}) at receptor location R2, which would be below the Project significance thresholds. As such, noise impacts from the Project mechanical equipment would be less than significant.

Table 14. Mechanical Noise Levels

Receptor Location	Estimated Noise from Mechanical Equipment, dBA (L_{eq})	Existing Ambient Noise Levels, dBA (L_{eq})	Significance Threshold[a]	Exceed over Significance Threshold	Significant Impact?
R1	30.5	62.1	62.1	0.0	No
R2	36.7	40.3	45.0	0.0	No
R3	34.9	38.9	45.0	0.0	No

Notes:
[a] *Significance thresholds are equal to the measured nighttime ambient or City's nighttime exterior noise standard of 45 dBA, whichever is greater.*
Source: AES, 2023

3.6.2 Loading Dock Operation

The Project includes a loading dock located at the southeast corner of the warehouse building. The loading dock includes four loading bays. Noise sources associated with the loading dock would include delivery truck loading/unloading of goods. Based on measured noise levels from typical loading dock facilities, delivery trucks could generate noise levels of approximately 64.7 dBA (L_{eq}) at a distance of 100 feet.[16] The noise analysis assumed three delivery trucks loading/unloading simultaneously, based on the anticipated maximum hourly delivery schedule. Table 15 (on page 30) presents the estimated noise levels associated with the loading dock operation at the off-site receptor locations. As shown on Table 15, the estimated noise levels from the loading dock range from 26.2 dBA (L_{eq}) at receptor R3 to 43.5 dBA (L_{eq}) at receptor location R2, which would be below the Project significance threshold. Therefore, noise impacts from the loading dock operation would be less than significant.

[16] *RK Engineering Group, Inc., Wal-Mart/Sam's Club Reference Noise Level Study, 2003.*

Table 15. Loading Dock Operation Noise Levels

Receptor Location	Estimated Noise from Loading Dock, dBA (L_{eq})	Existing Ambient Noise Levels, dBA (L_{eq})	Significance Threshold[a]	Exceed over Significance Threshold	Significant Impact?
R1	38.0	62.1	62.1	0.0	No
R2	43.5	40.3	45.0	0.0	No
R3	26.2	38.9	45.0	0.0	No

Notes:
[a] *Significance thresholds are equal to the measured nighttime ambient or City's nighttime exterior noise standard of 45 dBA, whichever is greater.*
Source: AES, 2023

3.6.3 Warehouse Delivery Trucks

The warehouse deliveries would occur between 2:00 a.m. and 1:00 p.m. with approximately 10 deliveries per day. The delivery trucks would enter the Project Site from the northwestern or western entrance (along Shirk Street) and exit through the southern entrance (along Riggin Avenue). To represent a conservative analysis, the noise analysis assumed three deliveries per hour (two semi-trucks and one box truck). The noise analysis assumed the delivery trucks would enter the Project Site through the western driveway (Shirk Street) and leaving the Project Site through the southern driveway (Riggin Avenue), during the nighttime hours. Table 16 (below) presents the estimated noise levels associated with the warehouse delivery trucks at the off-site noise sensitive receptors. As indicated in Table 16, the estimated noise levels from the warehouse delivery truck operation range from 30.7 dBA (L_{eq}) at receptor R3 to 43.8 dBA (L_{eq}) at receptor location R1, which would be below the significance threshold. Therefore, noise impacts from the warehouse delivery trucks would be less than significant.

Table 16. Warehouse Delivery Truck Noise Levels

Receptor Location	Estimated Noise from Warehouse Delivery Trucks, dBA (L_{eq})	Existing Ambient Noise Levels, dBA (L_{eq})	Significance Threshold[a]	Exceed over Significance Threshold	Significant Impact?
R1	43.8	62.1	62.1	0.0	No
R2	39.4	40.3	45.0	0.0	No
R3	30.7	38.9	45.0	0.0	No

Notes:
[a] *Significance thresholds are equal to the measured nighttime ambient or City's nighttime exterior noise standard of 45 dBA, whichever is greater.*
Source: AES, 2023

As presented above, the estimated noise levels associated with warehouse delivery trucks would be below the City's nighttime noise limit. Furthermore, a noise analysis is carried out to address the potential sleep disturbance using the Sound Exposure Level (SEL). It should be noted that the SEL analysis with respect to potential sleep disturbance is mainly applicable to aviation related noises. However, it can be used to evaluate potential sleep disturbance for a truck pass by as both can generate higher peak noise levels for relatively brief periods that could disrupt sleep. (Using the 1 hour L_{eq} that applies to the nighttime operations would average this peak noise over an hour, thereby understating potential sleep disturbance impacts.) Currently, there are no noise standard, or limit, to address traffic noise impacts on sleep (sleep disturbance), using SEL noise descriptor, and the Specific Plan EIR did not analyze this potential impact. However, to provide a more conservative analysis of Project noise, this Study evaluates potential sleep disturbance from the Project based on the assumption that sleep disturbance would occur at levels above81 dBA SEL at the interior of the residence.[17] Buildings with window open would provide approximately 13 dBA exterior/interior noise reduction. Therefore, based on the interior noise limit of 81 dBA SEL and typical noise reduction of building with window open of 13 dBA, the maximum exterior noise limit would be 94 dBA SEL, considered threshold for the sleep disturbance to occur. The estimated SEL due to a delivery truck would range from 66.3 dBA SEL at the exterior of receptor R3 (nearest future existing residences to the north) to 79.4 dBA SEL at the exterior of receptor R1 (existing residences to the south). As analyzed, the estimated SEL levels at the off-site sensitive receptors would be well below the 94 dBA SEL exterior noise limits. In addition, the estimated SEL at the interior of the nearest future residences, with the window opens (worst-case noise scenario) would be approximately 53.3 (future residences to the north) to 66.4 dBA SEL (existing residences to the south), which would be below the 81 dBA SEL interior noise limits.

3.6.4 Trash Compactors

The Project includes two trash compactors located along the east side of the warehouse building. The trash compactors would operate during the daytime hours between 10:00 a.m. and 8:30 p.m. Based on measured noise levels from typical trash compactor, a trash compactor could generate noise levels of approximately 65.5 dBA (L_{eq}) at a distance of 50 feet. [18] The noise analysis assumed both trash compactors would operate simultaneously to represent a conservative analysis. Table 17 (on page 32) presents the estimated noise levels associated with the trash compactors operation at the off-site receptor locations. As indicated in Table 17, the estimated noise levels from the warehouse delivery truck operation range

[17] As noted above, SEL analysis is most common in aviation-related projects. This Study uses a maximum 81 dBA SEL at the interior of a residence as a threshold, which standard has been employed in EIRs for other projects, such as the LAX South Airfield Improvement Project EIR.

[18] *RK Engineering Group, Inc., Wal-Mart/Sam's Club Reference Noise Level Study, 2003.*

from 18.4 dBA (L_{eq}) at receptor R1 to 43.5 dBA (L_{eq}) at receptor location R2, which would be below the Project significance thresholds. Therefore, noise impacts from the trash compactors operation would be less than significant.

Table 17. Trash compactors Operation Noise Levels

Receptor Location	Estimated Noise from Trash Compactor, dBA (L_{eq})	Existing Ambient Noise Levels, dBA (L_{eq})	Significance Threshold[a]	Exceed over Significance Threshold	Significant Impact?
R1	18.4	71.2	71.2	0.0	No
R2	43.5	45.9	50.0	0.0	No
R3	21.7	51.8	51.8	0.0	No

Notes:
[a] *Significance thresholds are equal to the measured daytime ambient or City's daytime exterior noise standard of 50 dBA, whichever is greater.*
Source: AES, 2023

3.6.5 Parking Lot Operation

The Project parking lot includes 904 parking spaces along the western, southern, and eastern sides of the Project Site. Sources of noise within the parking lot would primarily include vehicular movements and engine noise, sounding of doors opening and closing, and people talking. Noise levels within the parking structure would fluctuate with the amount of automobile and human activity. Table 18 (below) presents the estimated noise levels associated with the parking lot at the off-site receptor locations. As shown on Table 18, the estimated noise levels from the parking lot range from 39.5 dBA (L_{eq}) at receptor R2 to 44.3 dBA (L_{eq}) at receptor location R3, which would be below the existing ambient noise levels. As such, the estimated noise levels at all off-site receptor locations would be below the significance threshold. Therefore, noise impacts from the parking lot operation would be less than significant.

Table 18. Parking Lot Operation Noise Levels

Receptor Location	Estimated Noise from Parking Lot, dBA (L_{eq})	Existing Ambient Noise Levels, dBA (L_{eq})	Significance Threshold[a]	Exceed over Significance Threshold	Significant Impact?
R1	41.0	71.2	71.2	0.0	No
R2	39.5	45.9	50.0	0.0	No
R3	44.3	51.8	51.8	0.0	No

Notes:
[a] *Significance thresholds are equal to the measured daytime ambient or City's daytime exterior noise standard of 50 dBA, whichever is greater.*
Source: AES, 2023

3.6.6 Parking Lot Cleaning

In addition, the parking lot will be cleaned with a vacuum truck. The parking lot cleaning would typically occur during the early morning or late evening hours (before and after the warehouse open and closed). Reference noise level for a typical vacuum street sweeper, as published by the FHWA RCNM, is approximately 72 dBA (L_{eq}) at 50 feet. Table 19 (below) presents the estimated noise levels associated with the parking lot at the off-site receptor locations. As shown on Table 19, the estimated noise levels from the parking lot range from 42.6 dBA (L_{eq}) at receptor R2 to 46.0 dBA (L_{eq}) at receptor location R3, which would be below the significance thresholds. Therefore, noise impacts from the parking lot cleaning would be less than significant.

Table 19. Parking Lot Cleaning Noise Levels

Receptor Location	Estimated Noise from Parking Lot Cleaning, dBA (L_{eq})	Existing Ambient Noise Levels, dBA (L_{eq})	Significance Threshold[a]	Exceed over Significance Threshold	Significant Impact?
R1	43.2	71.2	71.2	0.0	No
R2	42.6	45.9	50.0	0.0	No
R3	46.0	51.8	51.8	0.0	No

Notes:
[a] *Significance thresholds are equal to the measured daytime ambient or City's daytime exterior noise standard of 50 dBA, whichever is greater.*
Source: AES, 2023

3.6.7 Tire Installation Center

The Project includes a member-only tire installation center, located at the west side of the warehouse building. Typical operations within the tire installation center would include various noise sources, including wheel balancers, tire changers, air-compressors, and pneumatic tools. Based on previous noise measurements made at a similar Costco facility, operation of the member-only tire installation center would generate average noise levels of approximately 65 dBA (L_{eq}), at a distance of 50 feet from the tire installation center open bay doors.[19] Table 20 (on page 34) presents the estimated noise levels associated with the parking lot at the off-site receptor locations. As shown on Table 20, the estimated noise levels from the parking lot range from 16.9 dBA (L_{eq}) at receptor R2 to 47.3 dBA (L_{eq}) at receptor location R3, which would be below the significance thresholds. Therefore, noise impacts from the tire installation center would be less than significant.

[19] *City of Redding, River Crossing Marketplace Specific Plan Draft EIR, Section 4.1 Noise, April 2018.*

Table 20. Tire Installation Center Noise Levels

Receptor Location	Estimated Noise from Tire Installation Center, dBA (L_{eq})	Existing Ambient Noise Levels, dBA (L_{eq})	Significance Threshold[a]	Exceed over Significance Threshold	Significant Impact?
R1	35.3	71.2	71.2	0.0	No
R2	16.9	45.9	50.0	0.0	No
R3	47.3	51.8	51.8	0.0	No

Notes:
[a] *Significance thresholds are equal to the measured daytime ambient or City's daytime exterior noise standard of 50 dBA, whichever is greater.*
Source: AES, 2023

3.6.8 Fuel Dispensers and Vehicle Queueing

The Project gas station will be located at the southwest corner of the Project Site and will include fifteen (15) fuel dispensers. In addition, the vehicle queue area will allow approximately 34 vehicles in queue. Noise levels from the fuel dispensers and vehicles queueing to the off-site noise sensitive receptors were calculated based on the measured noise levels made at a similar Costco fuel station.[20] The noise analysis assumed all fifteen (15) fuel dispensers would be operating at the same time and the vehicle queuing area would be filled with 34 vehicles to represent a worst-case scenario. Table 21 (on page 35) presents the estimated noise levels associated with the fuel station dispensers and vehicle queueing at the off-site receptor locations. As shown on Table 21, the estimated noise levels from the fuel dispensers and vehicle queueing range from 20.1 dBA (L_{eq}) at receptor R2 to 31.1 dBA (L_{eq}) at receptor location R3, which would be below the existing ambient noise levels. As such, the estimated noise levels at all off-site receptor locations would be below the Project significance thresholds. Therefore, noise impacts from fuel dispensers and vehicle queueing would be less than significant.

[20] *Noise levels were calculated based on measured noise levels at the existing Culver City Costco fuel station, in May 2021.*

Table 21. Fuel Dispensers and Vehicle Queueing Noise Levels

Receptor Location	Estimated Noise from Fuel Dispensers and Vehicle Queueing, dBA (L_{eq})	Existing Ambient Noise Levels, dBA (L_{eq})	Significance Threshold[a]	Exceed over Significance Threshold	Significant Impact?
R1	29.9	71.2	71.2	0.0	No
R2	20.1	45.9	50.0	0.0	No
R3	31.1	51.8	51.8	0.0	No

Notes:
[a] *Significance thresholds are equal to the measured daytime ambient or City's daytime exterior noise standard of 50 dBA, whichever is greater.*
Source: AES, 2023

3.6.9 Fuel Delivery Trucks

The fuel deliveries would occur between 5:00 a.m. and 10:00 p.m. with approximately five to six deliveries per day. The delivery truck would enter the fuel station from the western entrance (along Shirk Street) and exit through the southern entrance (along Riggin Avenue). Table 22 (below) presents the estimated noise levels associated with the fuel delivery trucks at the off-site noise sensitive receptors. As indicated in Table 22, the estimated noise levels from the fuel delivery truck operation range from 20.1 dBA (L_{eq}) at receptor R2 to 31.5 dBA (L_{eq}) at receptor location R3, which would be below the existing ambient noise levels. As such, the estimated noise levels at all off-site receptor locations would be below the significance thresholds. Therefore, noise impacts from the fuel delivery trucks would be less than significant.

Table 22. Fuel Delivery Truck Noise Levels

Receptor Location	Estimated Noise from Fuel Delivery Truck, dBA (L_{eq})	Existing Ambient Noise Levels, dBA (L_{eq})	Significance Threshold[a]	Exceed over Significance Threshold	Significant Impact?
R1	31.4	62.1	62.1	0.0	No
R2	20.1	40.3	45.0	0.0	No
R3	31.5	38.9	45.0	0.0	No

Notes:
[a] *Significance thresholds are equal to the measured nighttime ambient or City's nighttime exterior noise standard of 45 dBA, whichever is greater.*
Source: AES, 2023

In addition, a noise analysis is carried out to address the potential sleep disturbance associated with the fuel delivery truck using the Sound Exposure Level (SEL) criteria. The estimated SEL due to the fuel delivery truck would range from 55.7 dBA SEL at the exterior of receptor R2 (nearest future residence to the east) to 67.1 dBA SEL at the exterior of receptor R3 (nearest future residences to the north). As analyzed, the estimated SEL levels at all off-site sensitive receptor would be well below the 94 dBA SEL exterior noise limits. In addition, the estimated SEL at the interior of the nearest future residences, with the window opens (worst-case noise scenario) would be approximately 42.7 (future residences to the east) to 54.1 dBA SEL (future residences to the north), which would be below the 81 dBA SEL interior noise limits.

3.6.10 Car Wash

The Project Car Wash will be located at the northwest corner of the Project Site. The Car Wash is anticipated to be open between 6 a.m. and 10 p.m. The main noise source associated with the Car Wash operation is the blower located inside the Car Wash tunnel building. The blower fan sound data used for the noise analysis was provided by the manufacturer, International Drying Corporation.[21] Table 23 presents the estimated noise levels associated with the Car Wash operation at the off-site receptor locations. As shown on Table 21 , the estimated noise levels from the car wash operation range from 23.7 dBA (L_{eq}) at receptor R2 to 37.4 dBA (L_{eq}) at receptor location R3, which would be below the existing ambient noise levels. As such, the estimated noise levels at all off-site receptor locations would be below the Project significance thresholds. Therefore, noise impacts from car wash operation would be less than significant.

Table 23. Car Wash Noise Levels

Receptor Location	Estimated Noise from Car Wash Operation, dBA (L_{eq})	Existing Ambient Noise Levels, dBA (L_{eq})	Significance Threshold[a]	Exceed over Significance Threshold	Significant Impact?
R1	34.3	71.2	71.2	0.0	No
R2	23.7	45.9	50.0	0.0	No
R3	37.4	51.8	51.8	0.0	No

Notes:
[a] *Significance thresholds are equal to the measured daytime ambient or City's daytime exterior noise standard of 50 dBA, whichever is greater.*
Source: AES, 2023

[21] *International Drying Corporation, Stealth Predator Drying System, Sound Power Levels, as provided in the Specific Plan Acoustical Analysis.*

3.6.11 Composite On-Site Operational Noise Levels

An evaluation of composite operational noise levels, including all Project on-site noise sources plus existing ambient noise levels, was conducted to identify the potential Project-related noise level increase that may occur at the noise-sensitive receptor locations. Noise sources associated with the Project would include mechanical equipment, loading dock operation, warehouse delivery trucks, trash compactors, parking lot operation, tire center, Car Wash, and fuel station operation. Table 24 (on page 38) presents the estimated daytime noise levels from Project-related on-site noise sources at the off-site noise receptors. As indicated in Table 24, the estimated daytime composite noise levels due to the Project would range from 48.3 dBA (L_{eq}) at receptor R1 to 51.2 dBA (L_{eq}) at receptor R3. The estimated noise levels would be below the Project daytime significance threshold. Table 25 (on page 38) presents the estimated nighttime noise levels from Project-related on-site noise sources at the off-site noise receptors. As indicated in Table 25, the estimated nighttime composite noise levels due to the Project would range from 41.0 dBA (L_{eq}) at receptor R3 to 44.8 dBA (L_{eq}) at receptor R1. The estimated noise levels would be below the Project nighttime significance threshold at all off-site receptors. Therefore, the composite noise level impacts due to Project operation would be less than significant.

Table 24. Composite On-Site Operational Noise Impacts – Daytime Hours

Receptor Location	Calculated Project-Related Noise Levels, dBA (L_{eq})							Project Composite Noise Levels, dBA (L_{eq})	Ambient Noise Levels, dBA (L_{eq})	Significance Threshold[a]	Significant Impact?
	Mechanical	Loading & Warehouse Delivery Truck	Trash Compactor	Parking Lot	Tire Installation Center	Fuel Station and Fuel Delivery Truck	Car Wash				
R1	30.5	43.8	18.4	45.2	35.3	33.7	34.3	48.3	71.2	71.2	No
R2	36.7	43.5	43.5	44.3	16.9	23.1	23.7	48.9	45.9	50.0	No
R3	34.9	30.7	21.7	48.2	47.3	34.3	37.4	51.2	51.8	51.8	No

Notes:
[a] *Significance thresholds are equal to the measured daytime ambient or City's daytime exterior noise standard of 50 dBA, whichever is greater.*
Source: AES, 2023

Table 25. Composite On-Site Operational Noise Impacts – Nighttime Hours

Receptor Location	Calculated Project-Related Noise Levels, dBA (L_{eq})							Project Composite Noise Levels, dBA (L_{eq})	Ambient Noise Levels,[a] dBA (L_{eq})	Significance Threshold[b]	Significant Impact?
	Mechanical	Loading & Warehouse Delivery Truck	Trash Compactor	Parking Lot	Tire Installation Center	Fuel Delivery Truck	Car Wash				
R1	30.5	43.8	--[b]	--[b]	--[b]	33.7	34.3	44.8	62.1	62.1	No
R2	36.7	43.5	--[b]	--[b]	--[b]	23.1	23.7	44.4	40.3	45.0	No
R3	34.9	30.7	--[b]	--[b]	--[b]	34.3	37.4	41.0	38.9	45.0	No

Notes:
[a] *Significance thresholds are equal to the measured nighttime ambient or City's nighttime exterior noise standard of 45 dBA, whichever is greater.*
[b] *Not operating during the nighttime hours (10:00 p.m. to 7:00 a.m.)*
Source: AES, 2023

3.6.12 Off-Site Traffic

Traffic volumes at the roadway segments in the vicinity of the Project Site were provided by the Project traffic consultant.[22] Table 26 (on page 40) provides a summary of the off-site traffic noise analysis for Phase 1 and Phase 3. Project-generated traffic noise impacts were evaluated by comparing the increase in noise levels from the "future without project" condition to the "future with project" condition with the Project's significance threshold. As presented in Table 17, the Project would result in a maximum noise increase of 2.8 dBA and 1.9 dBA CNEL (relative to the "future without project" conditions) along Shirk Street (between Sedona Avenue and Riggin Avenue), under Phase 1 and Phase 3, respectively. The estimated noise increases would be below the 3 dBA significance threshold. Therefore, the off-site traffic noise impacts associated with the Project would be less than significant.

[22] *Kittelson & Associates, Inc., Visalia Costco Warehouse Focused Traffic Study, August 7, 2023.*

Table 26. Off-Site Traffic Noise Impacts

Roadway Segment	Calculated Traffic Noise Levels, CNEL (dBA)				Increase in Noise Levels, CNEL (dBA)		Significant Impact?	
	Phase 1 Without Project (A)	Phase 1 with Project (B)	Phase 3 Without Project (C)	Phase 3 With Project (D)	Phase 1 (B – A)	Phase 3 (D – C)	Phase 1	Phase 3
Shirk Street – Between Sedona Ave. and Riggin Ave.	64.4	67.2	67.0	68.9	2.8	1.9	No	No
Riggin Avenue - Between Shirk St. and Denton St.	68.2	69.8	72.1	72.8	1.6	0.7	No	No

Source: AES, 2023

4 MITIGATION MEASURES

4.1 Construction Noise

As discussed above, construction of the Project would not result in a significant noise impact, and no mitigation measures are required.

4.2 Construction Vibration

As analyzed above, vibration impacts from on-site construction activities would be less than significant pursuant to the significance criteria for both building damage and human annoyance. As such, no mitigation measures are required.

4.3 Operational Noise

As discussed above, operation of the Project would not result in a significant noise impact during operation. The Project will comply with Specific Plan EIR Mitigation Measure NOI-3 by reorienting the carwash to an east-west axis, shielding carwash noise with both the carwash tunnel and the proposed 7'4" sound wall described in PDF-1 in place of the 10' wall with AcoustiBlok lining, and incorporating an IDC 100 horsepower Predator Blower System running at 55Hz as described in PDF-6. Therefore, no mitigation measures are required.

5 LEVEL OF SIGNIFICANCE AFTER MITIGATION

5.1 Construction Noise

As discussed above, noise impacts associated with the Project construction would be less than significant.

5.2 Construction Vibration

As discussed above, potential vibration impacts associated with Project construction for both building damage and human annoyance would be less than significant.

5.3 Operation Noise

As discussed above, noise impacts associated with the Project operation would be less than significant.

Appendix A

Ambient Noise Measurements

AES
Acoustical Engineering Services

Location: R1
Date: 8/21/2023

Time	Leq
10:14:43 AM	72
10:14:53 AM	69.5
10:15:03 AM	83.7
10:15:13 AM	71.4
10:15:23 AM	54
10:15:33 AM	49.1
10:15:43 AM	71.1
10:15:53 AM	71.9
10:16:03 AM	52.4
10:16:13 AM	70.8
10:16:23 AM	68.2
10:16:33 AM	70.4
10:16:43 AM	52
10:16:53 AM	69.1
10:17:03 AM	68.7
10:17:13 AM	63
10:17:23 AM	67.2
10:17:33 AM	64.9
10:17:43 AM	71.2
10:17:53 AM	76.1
10:18:03 AM	69.6
10:18:13 AM	72
10:18:23 AM	65.8
10:18:33 AM	66.8
10:18:43 AM	57.4
10:18:53 AM	73.6
10:19:03 AM	68.5
10:19:13 AM	56.3
10:19:23 AM	49.8
10:19:33 AM	71.9
10:19:43 AM	70.3
10:19:53 AM	67.3
10:20:03 AM	67.8
10:20:13 AM	70.7
10:20:23 AM	71.2
10:20:33 AM	74.3
10:20:43 AM	77.3
10:20:53 AM	76.1
10:21:03 AM	77.4
10:21:13 AM	71.4
10:21:23 AM	72.5

10:21:33 AM	70.8
10:21:43 AM	72.7
10:21:53 AM	68.5
10:22:03 AM	56.4
10:22:13 AM	49.1
10:22:23 AM	70.7
10:22:33 AM	68.7
10:22:43 AM	70.8
10:22:53 AM	67.1
10:23:03 AM	62.3
10:23:13 AM	63.8
10:23:23 AM	42.8
10:23:33 AM	42.7
10:23:43 AM	68.8
10:23:53 AM	74.1
10:24:03 AM	73
10:24:13 AM	69.6
10:24:23 AM	68.4
10:24:33 AM	69.4
10:24:43 AM	51.8
10:24:53 AM	75.8
10:25:03 AM	70.1
10:25:13 AM	67.1
10:25:23 AM	52.7
10:25:33 AM	55.7
10:25:43 AM	68.8
10:25:53 AM	47.5
10:26:03 AM	71
10:26:13 AM	72.4
10:26:23 AM	64.6
10:26:33 AM	65.1
10:26:43 AM	55.7
10:26:53 AM	68
10:27:03 AM	51.2
10:27:13 AM	71.6
10:27:23 AM	79.1
10:27:33 AM	67.5
10:27:43 AM	51
10:27:53 AM	47.1
10:28:03 AM	41.7
10:28:13 AM	41.5
10:28:23 AM	39.6
10:28:33 AM	66.8
10:28:43 AM	72.8
10:28:53 AM	71.8

10:29:03 AM	52.7
10:29:13 AM	53.4
10:29:23 AM	72.4
10:29:33 AM	69.4
	71.2

Time	Leq
11:02:06 PM	39.9
11:02:16 PM	36.4
11:02:26 PM	35.5
11:02:36 PM	35.9
11:02:46 PM	43.5
11:02:56 PM	67.1
11:03:06 PM	53.2
11:03:16 PM	50
11:03:26 PM	39.1
11:03:36 PM	39.1
11:03:46 PM	45
11:03:56 PM	50.3
11:04:06 PM	46.9
11:04:16 PM	64.4
11:04:26 PM	65.8
11:04:36 PM	59
11:04:46 PM	49.3
11:04:56 PM	41.7
11:05:06 PM	45.8
11:05:16 PM	49.4
11:05:26 PM	52.6
11:05:36 PM	69.4
11:05:46 PM	70.3
11:05:56 PM	60.1
11:06:06 PM	62.2
11:06:16 PM	65.9
11:06:26 PM	66.6
11:06:36 PM	59.8
11:06:46 PM	73.9
11:06:56 PM	56
11:07:06 PM	54.7
11:07:16 PM	51
11:07:26 PM	47.8
11:07:36 PM	63.6
11:07:46 PM	68.8
11:07:56 PM	59.7
11:08:06 PM	53.1
11:08:16 PM	67.7

11:08:26 PM	51
11:08:36 PM	48.6
11:08:46 PM	52.6
11:08:56 PM	51.4
11:09:06 PM	65.4
11:09:16 PM	64.3
11:09:26 PM	48.3
11:09:36 PM	47.1
11:09:46 PM	43.7
11:09:56 PM	43.4
11:10:06 PM	42.8
11:10:16 PM	43.7
11:10:26 PM	43.7
11:10:36 PM	43.4
11:10:46 PM	43
11:10:56 PM	55.7
11:11:06 PM	63.3
11:11:16 PM	47.9
11:11:26 PM	43.4
11:11:36 PM	42.8
11:11:46 PM	42.8
11:11:56 PM	42.8
11:12:06 PM	43.4
11:12:16 PM	69.2
11:12:26 PM	61.8
11:12:36 PM	47.2
11:12:46 PM	51.1
11:12:56 PM	48.3
11:13:06 PM	43.7
11:13:16 PM	41.9
11:13:26 PM	45.6
11:13:36 PM	48.9
11:13:46 PM	44.4
11:13:56 PM	72.7
11:14:06 PM	63
11:14:16 PM	59.8
11:14:26 PM	65.4
11:14:36 PM	67.7
11:14:46 PM	67.5
11:14:56 PM	54.7
11:15:06 PM	45
11:15:16 PM	36.8
11:15:26 PM	35.6
11:15:36 PM	36.8
11:15:46 PM	38

11:15:56 PM	38.5
11:16:06 PM	43
11:16:16 PM	41.9
11:16:26 PM	37.7
11:16:36 PM	62.4
11:16:46 PM	58
11:16:56 PM	44.1
	62.1

AES
Acoustical Engineering Services

Project: Costco Visalia
Location: R2
Date: 8/21/2023

Time	Leq
10:35:45 AM	42.1
10:35:55 AM	42.6
10:36:05 AM	44.4
10:36:15 AM	43.4
10:36:25 AM	43.7
10:36:35 AM	42.9
10:36:45 AM	41.6
10:36:55 AM	44.7
10:37:05 AM	49.6
10:37:15 AM	49.0
10:37:25 AM	46.0
10:37:35 AM	44.7
10:37:45 AM	45.8
10:37:55 AM	49.6
10:38:05 AM	49.6
10:38:15 AM	52.0
10:38:25 AM	52.1
10:38:35 AM	48.3
10:38:45 AM	47.0
10:38:55 AM	46.6
10:39:05 AM	45.8
10:39:15 AM	44.0
10:39:25 AM	44.3
10:39:35 AM	45.0
10:39:45 AM	45.0
10:39:55 AM	43.9
10:40:05 AM	44.1
10:40:15 AM	44.3
10:40:25 AM	44.7
10:40:35 AM	43.3
10:40:45 AM	46.0
10:40:55 AM	47.1
10:41:05 AM	44.3
10:41:15 AM	43.3
10:41:25 AM	44.7
10:41:35 AM	45.6
10:41:45 AM	43.4
10:41:55 AM	43.7
10:42:05 AM	44.5
10:42:15 AM	44.0

10:42:25 AM	46.2
10:42:35 AM	45.6
10:42:45 AM	46.1
10:42:55 AM	44.1
10:43:05 AM	45.4
10:43:15 AM	43.7
10:43:25 AM	43.3
10:43:35 AM	44.6
10:43:45 AM	43.5
10:43:55 AM	43.3
10:44:05 AM	42.4
10:44:15 AM	43.8
10:44:25 AM	48.2
10:44:35 AM	46.3
10:44:45 AM	42.8
10:44:55 AM	45.0
10:45:05 AM	46.2
10:45:15 AM	50.0
10:45:25 AM	49.8
10:45:35 AM	49.4
10:45:45 AM	48.1
10:45:55 AM	46.9
10:46:05 AM	46.1
10:46:15 AM	43.6
10:46:25 AM	41.9
10:46:35 AM	44.6
10:46:45 AM	43.8
10:46:55 AM	43.1
10:47:05 AM	43.1
10:47:15 AM	42.9
10:47:25 AM	42.6
10:47:35 AM	43.4
10:47:45 AM	43.4
10:47:55 AM	43.7
10:48:05 AM	44.1
10:48:15 AM	41.9
10:48:25 AM	46.7
10:48:35 AM	46.1
10:48:45 AM	45.7
10:48:55 AM	45.3
10:49:05 AM	44.3
10:49:15 AM	43.4
10:49:25 AM	42.9
10:49:35 AM	43.9
10:49:45 AM	46.7

10:49:55 AM	46.4
10:50:05 AM	46.0
10:50:15 AM	48.8
10:50:25 AM	43.4
10:50:35 AM	45.2
	45.9

Time	Leq
11:23:03 PM	40.6
11:23:13 PM	38.7
11:23:23 PM	36.9
11:23:33 PM	39.4
11:23:43 PM	41.7
11:23:53 PM	37.6
11:24:03 PM	40.8
11:24:13 PM	40.8
11:24:23 PM	39.9
11:24:33 PM	39.2
11:24:43 PM	41.7
11:24:53 PM	38.0
11:25:03 PM	39.6
11:25:13 PM	48.6
11:25:23 PM	47.8
11:25:33 PM	42.2
11:25:43 PM	40.7
11:25:53 PM	42.9
11:26:03 PM	38.2
11:26:13 PM	35.6
11:26:23 PM	35.8
11:26:33 PM	36.2
11:26:43 PM	36.7
11:26:53 PM	36.6
11:27:03 PM	39.2
11:27:13 PM	37.6
11:27:23 PM	39.3
11:27:33 PM	38.0
11:27:43 PM	38.6
11:27:53 PM	36.6
11:28:03 PM	37.1
11:28:13 PM	37.6
11:28:23 PM	37.1
11:28:33 PM	34.3
11:28:43 PM	33.9
11:28:53 PM	35.1
11:29:03 PM	38.2

11:29:13 PM	38.7
11:29:23 PM	40.9
11:29:33 PM	45.5
11:29:43 PM	41.4
11:29:53 PM	37.9
11:30:03 PM	45.8
11:30:13 PM	44.6
11:30:23 PM	38.5
11:30:33 PM	38.5
11:30:43 PM	38.6
11:30:53 PM	39.5
11:31:03 PM	40.8
11:31:13 PM	42.0
11:31:23 PM	40.6
11:31:33 PM	39.0
11:31:43 PM	36.1
11:31:53 PM	34.9
11:32:03 PM	34.8
11:32:13 PM	33.6
11:32:23 PM	33.6
11:32:33 PM	33.1
11:32:43 PM	33.1
11:32:53 PM	33.1
11:33:03 PM	33.7
11:33:13 PM	33.8
11:33:23 PM	34.7
11:33:33 PM	35.2
11:33:43 PM	34.7
11:33:53 PM	36.3
11:34:03 PM	34.9
11:34:13 PM	34.9
11:34:23 PM	35.9
11:34:33 PM	37.7
11:34:43 PM	39.0
11:34:53 PM	41.7
11:35:03 PM	42.9
11:35:13 PM	42.0
11:35:23 PM	40.8
11:35:33 PM	41.8
11:35:43 PM	46.4
11:35:53 PM	43.7
11:36:03 PM	40.4
11:36:13 PM	38.9
11:36:23 PM	40.2
11:36:33 PM	38.1

11:36:43 PM	36.9
11:36:53 PM	36.9
11:37:03 PM	36.2
11:37:13 PM	37.3
11:37:23 PM	40.7
11:37:33 PM	43.6
11:37:43 PM	43.8
11:37:53 PM	39.3
	40.3

AES
Acoustical Engineering Services

Project: Costco Visalia
Location: R3
Date: 8/21/2023

Time	Leq
10:54:24 AM	46.1
10:54:34 AM	48.6
10:54:44 AM	48.8
10:54:54 AM	46.9
10:55:04 AM	47.2
10:55:14 AM	47.8
10:55:24 AM	46.9
10:55:34 AM	51.0
10:55:44 AM	51.0
10:55:54 AM	48.6
10:56:04 AM	50.1
10:56:14 AM	50.6
10:56:24 AM	47.7
10:56:34 AM	44.6
10:56:44 AM	41.5
10:56:54 AM	41.4
10:57:04 AM	43.5
10:57:14 AM	44.2
10:57:24 AM	47.1
10:57:34 AM	45.6
10:57:44 AM	47.2
10:57:54 AM	48.7
10:58:04 AM	45.8
10:58:14 AM	44.1
10:58:24 AM	47.0
10:58:34 AM	45.4
10:58:44 AM	46.7
10:58:54 AM	46.7
10:59:04 AM	45.2
10:59:14 AM	47.7
10:59:24 AM	48.4
10:59:34 AM	46.5
10:59:44 AM	46.0
10:59:54 AM	46.5
11:00:04 AM	44.6
11:00:14 AM	44.4
11:00:24 AM	44.6
11:00:34 AM	48.4
11:00:44 AM	51.9
11:00:54 AM	51.6

11:01:04 AM	50.7
11:01:14 AM	50.3
11:01:24 AM	49.7
11:01:34 AM	48.3
11:01:44 AM	46.8
11:01:54 AM	46.7
11:02:04 AM	46.3
11:02:14 AM	47.2
11:02:24 AM	43.9
11:02:34 AM	42.4
11:02:44 AM	42.6
11:02:54 AM	43.4
11:03:04 AM	48.1
11:03:14 AM	56.3
11:03:24 AM	60.1
11:03:34 AM	61.8
11:03:44 AM	63.4
11:03:54 AM	62.4
11:04:04 AM	60.3
11:04:14 AM	56.7
11:04:24 AM	56.0
11:04:34 AM	49.7
11:04:44 AM	48.2
11:04:54 AM	47.6
11:05:04 AM	48.9
11:05:14 AM	48.7
11:05:24 AM	46.6
11:05:34 AM	47.2
11:05:44 AM	50.1
11:05:54 AM	48.4
11:06:04 AM	46.3
11:06:14 AM	45.4
11:06:24 AM	47.2
11:06:34 AM	46.1
11:06:44 AM	45.8
11:06:54 AM	44.4
11:07:04 AM	45.8
11:07:14 AM	48.0
11:07:24 AM	49.9
11:07:34 AM	49.0
11:07:44 AM	48.4
11:07:54 AM	44.5
11:08:04 AM	42.8
11:08:14 AM	42.9
11:08:24 AM	48.7

11:08:34 AM	48.2
11:08:44 AM	48.0
11:08:54 AM	47.5
11:09:04 AM	46.4
11:09:14 AM	46.2
	51.8

Time	Leq
11:43:39 PM	43.4
11:43:49 PM	39.6
11:43:59 PM	39.2
11:44:09 PM	39.1
11:44:19 PM	38.6
11:44:29 PM	39.7
11:44:39 PM	38.1
11:44:49 PM	38.5
11:44:59 PM	38.0
11:45:09 PM	38.2
11:45:19 PM	38.5
11:45:29 PM	38.4
11:45:39 PM	38.4
11:45:49 PM	39.8
11:45:59 PM	40.4
11:46:09 PM	39.6
11:46:19 PM	38.7
11:46:29 PM	38.1
11:46:39 PM	38.1
11:46:49 PM	37.7
11:46:59 PM	37.7
11:47:09 PM	36.3
11:47:19 PM	38.9
11:47:29 PM	40.0
11:47:39 PM	36.1
11:47:49 PM	35.5
11:47:59 PM	37.6
11:48:09 PM	39.4
11:48:19 PM	43.0
11:48:29 PM	44.0
11:48:39 PM	43.6
11:48:49 PM	39.5
11:48:59 PM	40.2
11:49:09 PM	40.1
11:49:19 PM	40.0
11:49:29 PM	39.5
11:49:39 PM	36.3

11:49:49 PM	36.2
11:49:59 PM	37.8
11:50:09 PM	37.9
11:50:19 PM	35.5
11:50:29 PM	37.0
11:50:39 PM	36.1
11:50:49 PM	34.7
11:50:59 PM	34.2
11:51:09 PM	35.9
11:51:19 PM	35.4
11:51:29 PM	35.7
11:51:39 PM	34.9
11:51:49 PM	35.5
11:51:59 PM	35.1
11:52:09 PM	35.6
11:52:19 PM	35.5
11:52:29 PM	35.3
11:52:39 PM	35.3
11:52:49 PM	35.7
11:52:59 PM	35.6
11:53:09 PM	35.3
11:53:19 PM	38.1
11:53:29 PM	37.9
11:53:39 PM	39.7
11:53:49 PM	38.8
11:53:59 PM	37.7
11:54:09 PM	36.7
11:54:19 PM	36.5
11:54:29 PM	37.1
11:54:39 PM	37.1
11:54:49 PM	37.2
11:54:59 PM	36.7
11:55:09 PM	37.0
11:55:19 PM	36.8
11:55:29 PM	36.7
11:55:39 PM	36.8
11:55:49 PM	37.6
11:55:59 PM	38.7
11:56:09 PM	37.5
11:56:19 PM	40.8
11:56:29 PM	39.6
11:56:39 PM	38.9
11:56:49 PM	38.6
11:56:59 PM	37.4
11:57:09 PM	37.2

11:57:19 PM	37.3
11:57:29 PM	37.1
11:57:39 PM	37.4
11:57:49 PM	43.0
11:57:59 PM	40.8
11:58:09 PM	40.0
11:58:19 PM	41.9
11:58:29 PM	46.8
	38.9

Appendix B

Construction Noise & Vibration Calculations Worksheets

AES
ACOUSTICAL ENGINEERING SERVICES

Project: Costco Visalia Project

FROM SOUNDPLAN MODEL

Rec.	Description	Closest Distance	Mass Grading	Site Utilities	Foundation (Pad)	Concrete	Building Construction	Paving/Landscape
R1		370	59.7	56.8	58.7	60.3	58.1	58.6
R2		90	65.0	62.1	64.0	65.7	63.5	63.9
R3		25	70.3	67.3	69.3	70.9	68.7	69.2

AES
ACOUSTICAL ENGINEERING SERVICES

Project: Costco Visalia Project

Construction Equipment Reference Sound Levels

Description	Reference Noise Level at 50ft, dBA Lmax	Acoustical Usage Factor	Noise Level at 50ft, dBA Leq	Equipment Sound Power Level, dBA Leq
Backhoe	78	40%	74	105.7
Boom man lifts	75	20%	68	99.7
Concrete Pump	81	20%	74	105.7
Concrete Trucks	79	40%	75	106.7
Crew Truck	75	40%	71	102.7
Double End Dump	76	40%	72	103.7
Dump Trucks	76	40%	72	103.7
Excavator	81	40%	77	108.7
Grading Blade	84	40%	80	111.7
JLG lifts	75	20%	68	99.7
Laser Screeds	81	50%	78	109.6
Light Plants	73	50%	70	101.6
Loader	79	40%	75	106.7
Paving Equipment	77	50%	74	105.6
Rollers	80	20%	73	104.7
Scissor man lifts	75	20%	68	99.7
Scrapers	84	40%	80	111.7
Sheep Foot Dozer	82	40%	78	109.7
Skip Loaders	79	40%	75	106.7
Street Sweepers	82	10%	72	103.7
Trenching Machine	80	50%	77	108.6
Water Truck	82	10%	72	103.7

Source for Ref. Noise Levels: FHWA RCNM, 2006

Costco Visalia
Source Levels in dB(A) - 11 Mass Grading

Name	Source type	Lw dB(A)	
Dozer	Area	109.7	
Dump Truck 1	Area	103.7	
Dump Truck 2	Area	103.7	
Dump Truck 2	Area	103.7	
Dump Truck 2	Area	103.7	
Grading Blade	Area	111.7	
Scraper 1	Area	111.7	
Scraper 2	Area	111.7	
Scraper 3	Area	111.7	
Skip Loader 1	Area	106.7	
Trenching Machine	Area	108.6	
Water Truck	Area	103.7	

Costco Visalia
Calculated Noise Levels - 11 Mass Grading

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 59.7 dB(A)			
Dozer	Area	49.8	
Dump Truck 1	Area	43.8	
Dump Truck 2	Area	43.8	
Dump Truck 2	Area	43.8	
Dump Truck 2	Area	43.8	
Grading Blade	Area	51.8	
Trenching Machine	Area	48.7	
Scraper 1	Area	51.8	
Scraper 2	Area	51.8	
Scraper 3	Area	51.8	
Skip Loader 1	Area	46.8	
Water Truck	Area	43.8	
Receiver R2 Leq,d 65.1 dB(A)			
Dozer	Area	55.1	
Dump Truck 1	Area	49.1	
Dump Truck 2	Area	49.1	
Dump Truck 2	Area	49.1	
Dump Truck 2	Area	49.1	
Grading Blade	Area	57.1	
Trenching Machine	Area	54.0	
Scraper 1	Area	57.1	
Scraper 2	Area	57.1	
Scraper 3	Area	57.1	
Skip Loader 1	Area	52.1	
Water Truck	Area	49.1	
Receiver R3 Leq,d 70.3 dB(A)			
Dozer	Area	60.4	
Dump Truck 1	Area	54.4	
Dump Truck 2	Area	54.4	
Dump Truck 2	Area	54.4	
Dump Truck 2	Area	54.4	
Grading Blade	Area	62.4	
Trenching Machine	Area	59.3	
Scraper 1	Area	62.4	
Scraper 2	Area	62.4	
Scraper 3	Area	62.4	
Skip Loader 1	Area	57.4	
Water Truck	Area	54.4	

Costco Visalia
Source Levels in dB(A) - 12 Site Utilities

Name	Source type	Lw dB(A)	
Bachoe	Area	105.7	
Concrete Truck 1	Area	106.7	
Concrete Truck 2	Area	106.7	
Crew Truck	Area	102.7	
Excavator 1	Area	108.7	
Excavator 2	Area	108.7	
Trenching Machine	Area	108.6	
Trenching Machine	Area	108.6	
Water Truck	Area	103.7	

Costco Visalia
Calculated Noise Levels - 12 Site Utilities

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 56.8 dB(A)			
Bachoe	Area	45.8	
Concrete Truck 1	Area	46.8	
Concrete Truck 2	Area	46.8	
Crew Truck	Area	42.8	
Excavator 1	Area	48.8	
Excavator 2	Area	48.8	
Trenching Machine	Area	48.7	
Trenching Machine	Area	48.7	
Water Truck	Area	43.8	
Receiver R2 Leq,d 62.1 dB(A)			
Bachoe	Area	51.1	
Concrete Truck 1	Area	52.1	
Concrete Truck 2	Area	52.1	
Crew Truck	Area	48.1	
Excavator 1	Area	54.1	
Excavator 2	Area	54.1	
Trenching Machine	Area	54.0	
Trenching Machine	Area	54.0	
Water Truck	Area	49.1	
Receiver R3 Leq,d 67.3 dB(A)			
Bachoe	Area	56.4	
Concrete Truck 1	Area	57.4	
Concrete Truck 2	Area	57.4	
Crew Truck	Area	53.4	
Excavator 1	Area	59.4	
Excavator 2	Area	59.4	
Trenching Machine	Area	59.3	
Trenching Machine	Area	59.3	
Water Truck	Area	54.4	

Costco Visalia
Source Levels in dB(A) - 13 Foundation (Slab)

Name	Source type	Lw dB(A)	
Dozer	Area	109.7	
Grading Blade	Area	111.7	
Scraper 1	Area	111.7	
Scraper 2	Area	111.7	
Skip Loader 1	Area	106.7	
Skip Loader 2	Area	106.7	
Trenching Machine	Area	108.6	
Water Truck	Area	103.7	

Costco Visalia
Calculated Noise Levels - 13 Foundation (Slab)

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 58.7 dB(A)			
Dozer	Area	49.8	
Grading Blade	Area	51.8	
Trenching Machine	Area	48.7	
Scraper 1	Area	51.8	
Scraper 2	Area	51.8	
Skip Loader 1	Area	46.8	
Skip Loader 2	Area	46.8	
Water Truck	Area	43.8	
Receiver R2 Leq,d 64.0 dB(A)			
Dozer	Area	55.1	
Grading Blade	Area	57.1	
Trenching Machine	Area	54.0	
Scraper 1	Area	57.1	
Scraper 2	Area	57.1	
Skip Loader 1	Area	52.1	
Skip Loader 2	Area	52.1	
Water Truck	Area	49.1	
Receiver R3 Leq,d 69.3 dB(A)			
Dozer	Area	60.4	
Grading Blade	Area	62.4	
Trenching Machine	Area	59.3	
Scraper 1	Area	62.4	
Scraper 2	Area	62.4	
Skip Loader 1	Area	57.4	
Skip Loader 2	Area	57.4	
Water Truck	Area	54.4	

Costco Visalia
Source Levels in dB(A) - 14 Concrete

Name	Source type	Lw dB(A)	
Concrete Pump	Area	105.7	
Concrete Truck 1	Area	106.7	
Concrete Truck 2	Area	106.7	
Concrete Truck 2	Area	106.7	
Concrete Truck 2	Area	106.7	
Concrete Truck 2	Area	106.7	
Concrete Truck 2	Area	106.7	
Concrete Truck 2	Area	106.7	
Concrete Truck 2	Area	106.7	
Concrete Truck 2	Area	106.7	
Concrete Truck 2	Area	106.7	
Concrete Truck 2	Area	106.7	
Grading Blade	Area	111.7	
Laser Creed 1	Area	109.6	
Laser Screed 2	Area	109.6	
Light Plant	Area	101.6	
Light Plant	Area	101.6	
Light Plant	Area	101.6	
Light Plant	Area	101.6	
Light Plant	Area	101.6	
Light Plant	Area	101.6	
Skip Loader 1	Area	106.7	
Skip Loader 2	Area	106.7	
Street Sweeper	Area	103.7	
Water Truck	Area	103.7	

Costco Visalia
Calculated Noise Levels - 14 Concrete

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 60.3 dB(A)			
Concrete Pump	Area	45.8	
Concrete Truck 1	Area	46.8	
Concrete Truck 2	Area	46.8	
Concrete Truck 2	Area	46.8	
Concrete Truck 2	Area	46.8	
Concrete Truck 2	Area	46.8	
Concrete Truck 2	Area	46.8	
Concrete Truck 2	Area	46.8	
Concrete Truck 2	Area	46.8	
Concrete Truck 2	Area	46.8	
Concrete Truck 2	Area	46.8	
Concrete Truck 2	Area	46.8	
Grading Blade	Area	51.8	
Laser Creed 1	Area	49.7	
Laser Screed 2	Area	49.7	
Light Plant	Area	41.7	
Light Plant	Area	41.7	
Light Plant	Area	41.7	
Light Plant	Area	41.7	
Light Plant	Area	41.7	
Light Plant	Area	41.7	
Skip Loader 1	Area	46.8	
Skip Loader 2	Area	46.8	
Street Sweeper	Area	43.8	
Water Truck	Area	43.8	
Receiver R2 Leq,d 65.7 dB(A)			
Concrete Pump	Area	51.1	
Concrete Truck 1	Area	52.1	
Concrete Truck 2	Area	52.1	
Concrete Truck 2	Area	52.1	
Concrete Truck 2	Area	52.1	
Concrete Truck 2	Area	52.1	
Concrete Truck 2	Area	52.1	
Concrete Truck 2	Area	52.1	
Concrete Truck 2	Area	52.1	
Concrete Truck 2	Area	52.1	
Concrete Truck 2	Area	52.1	
Concrete Truck 2	Area	52.1	
Grading Blade	Area	57.1	
Laser Creed 1	Area	55.0	
Laser Screed 2	Area	55.0	
Light Plant	Area	47.0	
Light Plant	Area	47.0	
Light Plant	Area	47.0	

Costco Visalia
Calculated Noise Levels - 14 Concrete

Source	Source type	Leq,d dB(A)	
Light Plant	Area	47.0	
Light Plant	Area	47.0	
Light Plant	Area	47.0	
Skip Loader 1	Area	52.1	
Skip Loader 2	Area	52.1	
Street Sweeper	Area	49.1	
Water Truck	Area	49.1	
Receiver R3 Leq,d 70.9 dB(A)			
Concrete Pump	Area	56.4	
Concrete Truck 1	Area	57.4	
Concrete Truck 2	Area	57.4	
Concrete Truck 2	Area	57.4	
Concrete Truck 2	Area	57.4	
Concrete Truck 2	Area	57.4	
Concrete Truck 2	Area	57.4	
Concrete Truck 2	Area	57.4	
Concrete Truck 2	Area	57.4	
Concrete Truck 2	Area	57.4	
Concrete Truck 2	Area	57.4	
Grading Blade	Area	62.4	
Laser Creed 1	Area	60.3	
Laser Screed 2	Area	60.3	
Light Plant	Area	52.3	
Light Plant	Area	52.3	
Light Plant	Area	52.3	
Light Plant	Area	52.3	
Light Plant	Area	52.3	
Light Plant	Area	52.3	
Skip Loader 1	Area	57.4	
Skip Loader 2	Area	57.4	
Street Sweeper	Area	54.4	
Water Truck	Area	54.4	

Costco Visalia
Source Levels in dB(A) - 15 Building Construction

Name	Source type	Lw dB(A)	
Boom Man Lift 1	Area	99.7	
Boom Man Lift 2	Area	99.7	
Boom Man Lift 3	Area	99.7	
Boom Man Lift 4	Area	99.7	
Boom Man Lift 5	Area	99.7	
Boom Man Lift 6	Area	99.7	
JLG Lift 1	Area	99.7	
JLG Lift 1	Area	99.7	
JLG Lift 1	Area	99.7	
JLG Lift 1	Area	99.7	
JLG Lift 1	Area	99.7	
Scissor Man Lift 1	Area	99.7	
Scissor Man Lift 2	Area	99.7	
Scissor Man Lift 3	Area	99.7	
Scissor Man Lift 4	Area	99.7	
Scissor Man Lift 5	Area	99.7	
Scissor Man Lift 6	Area	99.7	

Costco Visalia
Calculated Noise Levels - 15 Building Construction

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 52.1 dB(A)			
Boom Man Lift 1	Area	39.8	
Boom Man Lift 2	Area	39.8	
Boom Man Lift 3	Area	39.8	
Boom Man Lift 4	Area	39.8	
Boom Man Lift 5	Area	39.8	
Boom Man Lift 6	Area	39.8	
JLG Lift 1	Area	39.8	
JLG Lift 1	Area	39.8	
JLG Lift 1	Area	39.8	
JLG Lift 1	Area	39.8	
JLG Lift 1	Area	39.8	
Scissor Man Lift 1	Area	39.8	
Scissor Man Lift 2	Area	39.8	
Scissor Man Lift 3	Area	39.8	
Scissor Man Lift 4	Area	39.8	
Scissor Man Lift 5	Area	39.8	
Scissor Man Lift 6	Area	39.8	
Receiver R2 Leq,d 57.4 dB(A)			
Boom Man Lift 1	Area	45.1	
Boom Man Lift 2	Area	45.1	
Boom Man Lift 3	Area	45.1	
Boom Man Lift 4	Area	45.1	
Boom Man Lift 5	Area	45.1	
Boom Man Lift 6	Area	45.1	
JLG Lift 1	Area	45.1	
JLG Lift 1	Area	45.1	
JLG Lift 1	Area	45.1	
JLG Lift 1	Area	45.1	
JLG Lift 1	Area	45.1	
Scissor Man Lift 1	Area	45.1	
Scissor Man Lift 2	Area	45.1	
Scissor Man Lift 3	Area	45.1	
Scissor Man Lift 4	Area	45.1	
Scissor Man Lift 5	Area	45.1	
Scissor Man Lift 6	Area	45.1	
Receiver R3 Leq,d 62.7 dB(A)			
Boom Man Lift 1	Area	50.4	
Boom Man Lift 2	Area	50.4	
Boom Man Lift 3	Area	50.4	
Boom Man Lift 4	Area	50.4	
Boom Man Lift 5	Area	50.4	
Boom Man Lift 6	Area	50.4	

Costco Visalia
Calculated Noise Levels - 15 Building Construction

Source	Source type	Leq,d dB(A)	
JLG Lift 1	Area	50.4	
JLG Lift 1	Area	50.4	
JLG Lift 1	Area	50.4	
JLG Lift 1	Area	50.4	
JLG Lift 1	Area	50.4	
Scissor Man Lift 1	Area	50.4	
Scissor Man Lift 2	Area	50.4	
Scissor Man Lift 3	Area	50.4	
Scissor Man Lift 4	Area	50.4	
Scissor Man Lift 5	Area	50.4	
Scissor Man Lift 6	Area	50.4	

Costco Visalia
Source Levels in dB(A) - 16 Paving

Name	Source type	Lw dB(A)	
Double End Dump 1	Area	103.7	
Double End Dump 1	Area	103.7	
Double End Dump 1	Area	103.7	
Double End Dump 1	Area	103.7	
Double End Dump 1	Area	103.7	
Double End Dump 1	Area	103.7	
Double End Dump 1	Area	103.7	
Double End Dump 1	Area	103.7	
Double End Dump 1	Area	103.7	
Double End Dump 1	Area	103.7	
Double End Dump 1	Area	103.7	
Double End Dump 1	Area	103.7	
Double End Dump 1	Area	103.7	
Double End Dump 1	Area	103.7	
Double End Dump 1	Area	103.7	
Double End Dump 1	Area	103.7	
Double End Dump 1	Area	103.7	
Double End Dump 1	Area	103.7	
Double End Dump 1	Area	103.7	
Double End Dump 1	Area	103.7	
Double End Dump 1	Area	103.7	
Paving Equipment	Area	105.6	
Roller 1	Area	104.7	
Roller 2	Area	104.7	
Roller 3	Area	104.7	
Skip Loader 1	Area	106.7	
Skip Loader 2	Area	106.7	
Street Sweeper	Area	103.7	

Costco Visalia
Calculated Noise Levels - 16 Paving

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 58.6 dB(A)			
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Double End Dump 1	Area	43.8	
Paving Equipment	Area	45.7	
Roller 1	Area	44.8	
Roller 2	Area	44.8	
Roller 3	Area	44.8	
Skip Loader 1	Area	46.8	
Skip Loader 2	Area	46.8	
Street Sweeper	Area	43.8	
Receiver R2 Leq,d 63.9 dB(A)			
Double End Dump 1	Area	49.1	
Double End Dump 1	Area	49.1	
Double End Dump 1	Area	49.1	
Double End Dump 1	Area	49.1	
Double End Dump 1	Area	49.1	
Double End Dump 1	Area	49.1	
Double End Dump 1	Area	49.1	
Double End Dump 1	Area	49.1	
Double End Dump 1	Area	49.1	
Double End Dump 1	Area	49.1	
Double End Dump 1	Area	49.1	
Double End Dump 1	Area	49.1	
Double End Dump 1	Area	49.1	
Double End Dump 1	Area	49.1	
Double End Dump 1	Area	49.1	

Costco Visalia
Calculated Noise Levels - 16 Paving

Source	Source type	Leq,d dB(A)	
Double End Dump 1	Area	49.1	
Double End Dump 1	Area	49.1	
Double End Dump 1	Area	49.1	
Double End Dump 1	Area	49.1	
Double End Dump 1	Area	49.1	
Double End Dump 1	Area	49.1	
Paving Equipment	Area	51.0	
Roller 1	Area	50.1	
Roller 2	Area	50.1	
Roller 3	Area	50.1	
Skip Loader 1	Area	52.1	
Skip Loader 2	Area	52.1	
Street Sweeper	Area	49.1	
Receiver R3 Leq,d 69.2 dB(A)			
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Double End Dump 1	Area	54.4	
Paving Equipment	Area	56.3	
Roller 1	Area	55.4	
Roller 2	Area	55.4	
Roller 3	Area	55.4	
Skip Loader 1	Area	57.4	
Skip Loader 2	Area	57.4	
Street Sweeper	Area	54.4	

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Project: Costco Visalia Project

Construction Vibration Impacts

Reference Levels at 25 feet are based on FTA, 2006 (Transit Noise and Vibration Impact Assessment)
Calculations using FTA procedure with n= **1.5** (for receptors 25 feet or greater)
n= **1.1** (for receptors less than 25 feet, per Caltrans procedure)

ON-SITE CONSTRUCTION ACTIVITIES

Table 1: Construction Equipment Vibration Levels (PPV) - Building Damages

Equipment	Reference Vibration Levels at 25 ft., PPV	Estimated Vibration Levels at nearest off-site building structures (distance in feet), PPV							
		Commercial Buildings to the South	Residential Building to the South						
		25	370						
Vibratory Roller	0.210	0.210	0.004						
Large Bulldozer	0.089	0.089	0.002						
Loaded Trucks	0.076	0.076	0.001						
Small bulldozer	0.003	0.003	0.000						
Significance Threshold, PPV		0.5	0.2						

Table 2: Construction Equipment Vibration Levels (VdB) - Human Annoyance

Equipment	Reference Vibration Levels at 25 ft., VdB	Estimated Vibration Levels at Off-Site Receptors (at note distance in feet), VdB							
		R1	R2	R3					
		370	90	25					
Vibratory Roller	94	59	77	94					
Large Bulldozer	87	52	70	87					
Loaded Trucks	86	51	69	86					
Small bulldozer	58	23	41	58					
Significance Threshold, VdB		80	80	80					

Appendix C

Operation Noise Calculations Worksheets

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Project Composite Noise Calculations (Leq)

Project: Costco Visalia Project

DAYTIME

Receptor	Ambient	Mechanical	Loading & Delivery Truck	Trash Compactor	Parking Lot	Tire Installation	Fuel Station & Delivery	Carwash	Project Composite	Ambient + Project	Exceedance	Threshold
R1	71.2	30.5	43.8	18.4	45.2	35.3	33.7	34.3	48.3	71.2	0.0	71.2
R2	45.9	36.7	43.5	43.5	44.3	16.9	23.1	23.7	48.9	50.6	0.0	50.0
R3	51.8	34.9	30.7	21.7	48.2	47.3	34.3	37.4	51.2	54.5	0.0	51.8

NIGHTTIME

Receptor	Ambient	Mechanical	Loading & Delivery Truck	Trash Compactor	Parking Lot	Tire Installation	Fuel Station & Delivery	Carwash	Project Composite	Ambient + Project	Increase	Threshold
R1	62.1	30.5	43.8				33.7	34.3	44.8	62.2	0.0	62.1
R2	40.3	36.7	43.5				23.1	23.7	44.4	45.8	0.0	45.0
R3	38.9	34.9	30.7				34.3	37.4	41.0	43.1	0.0	45.0

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Mechanical Noise Calculations

Project: Costco Visalia Project

Receptor	Estimated Noise Levels (from SoundPlan), dBA (Leq)	Ambient Noise Levels, dBA (Leq)	Ambient + Project, dBA (Leq)	Project Limit, dBA (Leq)	Noise Exceedance, dBA (Leq)
R1	30.5	62.1	62.1	62.1	0.0
R2	36.7	40.3	41.9	45.0	0.0
R3	34.9	38.9	40.4	45.0	0.0

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Loading Dock Noise Calculations

Project: Costco Visalia Project

Receptor	Estimated Noise Levels (from SoundPlan), dBA (Leq)	Ambient Noise Levels, dBA (Leq)	Ambient + Project, dBA (Leq)	Project Limit, dBA (Leq)	Noise Exceedance, dBA (Leq)
R1	38.0	62.1	62.1	62.1	0.0
R2	43.5	40.3	45.2	45.0	0.2
R3	26.2	38.9	39.1	45.0	0.0

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Trash Compactors Noise Calculations

Project: Costco Visalia Project

Receptor	Estimated Noise Levels (from SoundPlan), dBA (Leq)	Ambient Noise Levels, dBA (Leq)	Ambient + Project, dBA (Leq)	Project Limit, dBA (Leq)	Noise Exceedance, dBA (Leq)
R1	18.4	71.2	71.2	71.2	0.0
R2	43.5	45.9	47.9	50.0	0.0
R3	21.7	51.8	51.8	51.8	0.0

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Tire Installation Center Calculations

Project: Costco Visalia Project

Receptor	Estimated Noise Levels (from SoundPlan), dBA (Leq)	Ambient Noise Levels, dBA (Leq)	Ambient + Project, dBA (Leq)	Project Limit, dBA (Leq)	Noise Exceedance, dBA (Leq)
R1	35.3	71.2	71.2	71.2	0.0
R2	16.9	45.9	45.9	50.0	0.0
R3	47.3	51.8	53.1	51.8	1.3

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Parking Lot Noise Calculations

Project: Costco Visalia Project

Receptor	Estimated Noise Levels (from SoundPlan), dBA (Leq)	Ambient Noise Levels, dBA (Leq)	Ambient + Project, dBA (Leq)	Project Limit, dBA (Leq)	Noise Exceedance, dBA (Leq)
R1	41.0	71.2	71.2	71.2	0.0
R2	39.5	45.9	46.8	50.0	0.0
R3	44.3	51.8	52.5	51.8	0.7

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Parking Lot Sweeper Noise Calculations

Project: Costco Visalia Project

Receptor	Estimated Noise Levels (from SoundPlan), dBA (Leq)	Ambient Noise Levels, dBA (Leq)	Ambient + Project, dBA (Leq)	Project Limit, dBA (Leq)	Noise Exceedance, dBA (Leq)
R1	43.2	71.2	71.2	71.2	0.0
R2	42.6	45.9	47.6	50.0	0.0
R3	46.0	51.8	52.8	51.8	1.0

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Product Dispenser and Vehicle Queueing Noise Calculations

Project: Costco Visalia Project

Receptor	Estimated Noise Levels (from SoundPlan), dBA (Leq)	Ambient Noise Levels, dBA (Leq)	Ambient + Project, dBA (Leq)	Project Limit, dBA (Leq)	Noise Exceedance, dBA (Leq)
R1	29.9	71.2	71.2	71.2	0.0
R2	20.1	45.9	45.9	50.0	0.0
R3	31.1	51.8	51.8	51.8	0.0

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Product Delivery Truck Noise Calculations

Project: Costco Visalia Project

Receptor	Estimated Noise Levels (from SoundPlan), dBA (Leq)	Ambient Noise Levels, dBA (Leq)	Ambient + Project, dBA (Leq)	Project Limit, dBA (Leq)	Noise Exceedance, dBA (Leq)
R1	31.4	62.1	62.1	62.1	0.0
R2	20.1	40.3	40.3	45.0	0.0
R3	31.5	38.9	39.6	45.0	0.0

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Product Delivery Trucks Noise Calculations - SEL Analysis

Project: Costco Visalia Project

Receptor	Estimated Noise Levels, Hourly Leq (One Truck Passby) from SOUNDPLAN	Calculated SEL (One Truck Passby), dBA	SEL Limit for Sleep Disturbance, dBA
R1	31.4	67.0	94
R2	20.1	55.7	94
R3	31.5	67.1	94

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Warehouse Delivery Truck Noise Calculations

Project: Costco Visalia Project

Receptor	Estimated Noise Levels (from SoundPlan), dBA (Leq)	Ambient Noise Levels, dBA (Leq)	Ambient + Project, dBA (Leq)	Project Limit, dBA (Leq)	Noise Exceedance, dBA (Leq)
R1	43.8	62.1	62.2	62.1	0.1
R2	39.4	40.3	42.9	45.0	0.0
R3	30.7	38.9	39.5	45.0	0.0

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Warehouse Delivery Trucks Noise Calculations - SEL Analysis

Project: Costco Visalia Project

Receptor	Estimated Noise Levels, Hourly Leq (One Truck Passby) from SOUNDPLAN	Calculated SEL (One Truck Passby), dBA	SEL Limit for Sleep Disturbance, dBA
R1	43.8	79.4	94
R2	39.4	75.0	94
R3	30.7	66.3	94

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Car Wash Noise Calculations

Project: Costco Visalia Project

Receptor	Estimated Noise Levels (from SoundPlan), dBA (Leq)	Ambient Noise Levels, dBA (Leq)	Ambient + Project, dBA (Leq)	Project Limit, dBA (Leq)	Noise Exceedance, dBA (Leq)
R1	34.3	71.2	71.2	71.2	0.0
R2	23.7	45.9	45.9	50.0	0.0
R3	37.4	51.8	52.0	51.8	0.2

Costco Visalia
Source Levels in dB(A) - 01 Mechanical

Name	Source type	Lw dB(A)	
Mechanical	Point	84.3	
Mechanical	Point	84.3	
Mechanical	Point	84.3	
Mechanical	Point	84.3	
Mechanical	Point	84.3	
Mechanical	Point	84.3	
Mechanical	Point	84.3	
Mechanical	Point	84.3	
Mechanical	Point	84.3	
Mechanical	Point	84.3	
Mechanical	Point	84.3	
Mechanical	Point	84.3	
Mechanical	Point	84.3	
Mechanical	Point	84.3	
Mechanical	Point	84.3	
Mechanical	Point	84.3	
Mechanical	Point	84.3	
Mechanical	Point	84.3	
Mechanical	Point	84.3	
Mechanical	Point	84.3	

Costco Visalia
Calculated Noise Levels - 01 Mechanical

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 30.5 dB(A)			
Mechanical	Point	16.4	
Mechanical	Point	17.0	
Mechanical	Point	18.6	
Mechanical	Point	19.5	
Mechanical	Point	19.8	
Mechanical	Point	19.5	
Mechanical	Point	17.6	
Mechanical	Point	16.5	
Mechanical	Point	15.9	
Mechanical	Point	19.5	
Mechanical	Point	18.2	
Mechanical	Point	16.8	
Mechanical	Point	17.4	
Mechanical	Point	15.4	
Mechanical	Point	15.3	
Mechanical	Point	15.7	
Mechanical	Point	15.6	
Mechanical	Point	17.7	
Mechanical	Point	19.0	
Receiver R2 Leq,d 36.7 dB(A)			
Mechanical	Point	17.7	
Mechanical	Point	16.7	
Mechanical	Point	18.2	
Mechanical	Point	19.3	
Mechanical	Point	20.7	
Mechanical	Point	24.5	
Mechanical	Point	19.5	
Mechanical	Point	21.6	
Mechanical	Point	19.7	
Mechanical	Point	29.2	
Mechanical	Point	25.4	
Mechanical	Point	25.1	
Mechanical	Point	25.0	
Mechanical	Point	24.8	
Mechanical	Point	26.9	
Mechanical	Point	25.0	
Mechanical	Point	27.2	
Mechanical	Point	17.8	
Mechanical	Point	22.3	
Receiver R3 Leq,d 34.9 dB(A)			
Mechanical	Point	23.8	
Mechanical	Point	28.3	

Costco Visalia
Calculated Noise Levels - 01 Mechanical

Source	Source type	Leq,d dB(A)	
Mechanical	Point	25.9	
Mechanical	Point	23.7	
Mechanical	Point	19.3	
Mechanical	Point	16.5	
Mechanical	Point	19.6	
Mechanical	Point	20.4	
Mechanical	Point	23.4	
Mechanical	Point	15.6	
Mechanical	Point	16.7	
Mechanical	Point	18.6	
Mechanical	Point	17.7	
Mechanical	Point	22.2	
Mechanical	Point	21.8	
Mechanical	Point	21.1	
Mechanical	Point	20.8	
Mechanical	Point	21.9	
Mechanical	Point	17.6	

Costco Visalia
Source Levels in dB(A) - 02 Loading

Name	Source type	Lw dB(A)	
Loading 1	Point	102.4	
Loading 2	Point	102.4	
Loading 3	Point	102.4	

Costco Visalia
Calculated Noise Levels - 02 Loading

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 38.8 dB(A)			
Loading 1	Point	26.0	
Loading 2	Point	28.0	
Loading 3	Point	38.2	
Receiver R2 Leq,d 43.5 dB(A)			
Loading 1	Point	38.7	
Loading 2	Point	38.9	
Loading 3	Point	38.6	
Receiver R3 Leq,d 26.2 dB(A)			
Loading 1	Point	21.6	
Loading 2	Point	21.5	
Loading 3	Point	21.3	

Costco Visalia
Source Levels in dB(A) - 03 Trash Compactors

Name	Source type	Lw dB(A)	
Trash Compactors	Point	97.7	
Trash Compactors	Point	97.7	

Costco Visalia
Calculated Noise Levels - 03 Trash Compactors

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 18.4 dB(A)			
Trash Compactors	Point	15.6	
Trash Compactors	Point	15.1	
Receiver R2 Leq,d 43.5 dB(A)			
Trash Compactors	Point	40.6	
Trash Compactors	Point	40.4	
Receiver R3 Leq,d 21.7 dB(A)			
Trash Compactors	Point	18.8	
Trash Compactors	Point	18.6	

Costco Visalia
Source Levels in dB(A) - 04 Tire Center

Name	Source type	Lw dB(A)	
Tire Center	Area	96.7	

Costco Visalia
Calculated Noise Levels - 04 Tire Center

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 35.3 dB(A)			
Tire Center	Area	35.3	
Receiver R2 Leq,d 16.9 dB(A)			
Tire Center	Area	16.9	
Receiver R3 Leq,d 47.3 dB(A)			
Tire Center	Area	47.3	

Costco Visalia
Input data parking lots - 05 Parking

Parking lot	Number of Parking Spaces	
Parking Area 1 (NE)	16	
Parking Area 2 (Northwest)	42	
Parking Area 3	7	
Parking Area 4	16	
Parking Area 5 (East)	17	
Parking Area 6	20	
Parking Area 7	22	
Parking Area 8	32	
Parking Area 9	34	
Parking Area 10	32	
Parking Area 11	34	
Parking Area 12	31	
Parking Area 13	30	
Parking Area 14	24	
Parking Area 15	57	
Parking Area 16	37	
Parking Area 17	72	
Parking Area 18	74	
Parking Area 19	72	
Parking Area 20	70	
Parking Area 21	48	
Parking Area 22	46	
Parking Area 23	48	
Parking Area 24	21	

Costco Visalia
Calculated Noise Levels - 05 Parking

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 41.0 dB(A)			
Parking Area 1 (NE)	PLot	5.2	
Parking Area 2 (Northwest)	PLot	22.9	
Parking Area 3	PLot	12.6	
Parking Area 4	PLot	17.5	
Parking Area 5 (East)	PLot	21.5	
Parking Area 6	PLot	22.4	
Parking Area 7	PLot	23.5	
Parking Area 8	PLot	26.7	
Parking Area 9	PLot	27.5	
Parking Area 10	PLot	27.6	
Parking Area 11	PLot	28.3	
Parking Area 12	PLot	28.1	
Parking Area 13	PLot	28.0	
Parking Area 14	PLot	25.7	
Parking Area 15	PLot	27.7	
Parking Area 16	PLot	29.3	
Parking Area 17	PLot	32.3	
Parking Area 18	PLot	31.6	
Parking Area 19	PLot	30.5	
Parking Area 20	PLot	29.8	
Parking Area 21	PLot	26.1	
Parking Area 22	PLot	25.1	
Parking Area 23	PLot	24.8	
Parking Area 24	PLot	19.4	
Receiver R2 Leq,d 39.5 dB(A)			
Parking Area 1 (NE)	PLot	28.7	
Parking Area 2 (Northwest)	PLot	13.4	
Parking Area 3	PLot	2.8	
Parking Area 4	PLot	8.4	
Parking Area 5 (East)	PLot	28.5	
Parking Area 6	PLot	29.7	
Parking Area 7	PLot	29.1	
Parking Area 8	PLot	30.0	
Parking Area 9	PLot	29.2	
Parking Area 10	PLot	27.9	
Parking Area 11	PLot	27.5	
Parking Area 12	PLot	25.9	
Parking Area 13	PLot	24.9	
Parking Area 14	PLot	25.3	
Parking Area 15	PLot	15.9	
Parking Area 16	PLot	23.6	
Parking Area 17	PLot	27.7	

Costco Visalia
Calculated Noise Levels - 05 Parking

Source	Source type	Leq,d dB(A)	
Parking Area 18	PLot	26.9	
Parking Area 19	PLot	21.5	
Parking Area 20	PLot	18.0	
Parking Area 21	PLot	14.6	
Parking Area 22	PLot	13.8	
Parking Area 23	PLot	13.7	
Parking Area 24	PLot	8.7	
Receiver R3 Leq,d 44.3 dB(A)			
Parking Area 1 (NE)	PLot	17.2	
Parking Area 2 (Northwest)	PLot	30.8	
Parking Area 3	PLot	20.4	
Parking Area 4	PLot	24.2	
Parking Area 5 (East)	PLot	7.7	
Parking Area 6	PLot	8.7	
Parking Area 7	PLot	9.5	
Parking Area 8	PLot	12.3	
Parking Area 9	PLot	13.3	
Parking Area 10	PLot	13.7	
Parking Area 11	PLot	14.9	
Parking Area 12	PLot	15.2	
Parking Area 13	PLot	24.4	
Parking Area 14	PLot	9.4	
Parking Area 15	PLot	33.4	
Parking Area 16	PLot	26.6	
Parking Area 17	PLot	31.0	
Parking Area 18	PLot	32.0	
Parking Area 19	PLot	32.6	
Parking Area 20	PLot	33.4	
Parking Area 21	PLot	34.1	
Parking Area 22	PLot	35.2	
Parking Area 23	PLot	37.6	
Parking Area 24	PLot	35.7	

Costco Visalia
Source Levels in dB(A) - 06 Parking Sweeper

Name	Source type	Lw dB(A)	
Parking Lot Sweeper	Area	103.7	

Costco Visalia
Calculated Noise Levels - 06 Parking Sweeper

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 43.2 dB(A)			
Parking Lot Sweeper	Area	43.2	
Receiver R2 Leq,d 42.6 dB(A)			
Parking Lot Sweeper	Area	42.6	
Receiver R3 Leq,d 46.0 dB(A)			
Parking Lot Sweeper	Area	46.0	

Costco Visalia
Source Levels in dB(A) - 07 Fuel Station

Name	Source type	Lw dB(A)	
Fuel Dispenser 1	Point	75.9	
Fuel Dispenser 2	Point	75.9	
Fuel Dispenser 3	Point	75.9	
Fuel Dispenser 4	Point	75.9	
Fuel Dispenser 5	Point	75.9	
Fuel Dispenser 6	Point	75.9	
Fuel Dispenser 7	Point	75.9	
Fuel Dispenser 8	Point	75.9	
Fuel Dispenser 9	Point	75.9	
Fuel Dispenser 10	Point	75.9	
Fuel Dispenser 11	Point	75.9	
Fuel Dispenser 12	Point	75.9	
Fuel Dispenser 13	Point	75.9	
Fuel Dispenser 14	Point	75.9	
Fuel Dispenser 15	Point	75.9	
Fuel Station Vehicle Queue (34 cars)	Area	88.4	

Costco Visalia
Calculated Noise Levels - 07 Fuel Station

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 29.9 dB(A)			
Fuel Station Vehicle Queue (34 cars)	Area	26.7	
Fuel Dispenser 1	Point	15.2	
Fuel Dispenser 2	Point	15.5	
Fuel Dispenser 3	Point	15.8	
Fuel Dispenser 4	Point	16.1	
Fuel Dispenser 5	Point	14.9	
Fuel Dispenser 6	Point	15.2	
Fuel Dispenser 7	Point	15.5	
Fuel Dispenser 8	Point	15.8	
Fuel Dispenser 9	Point	14.7	
Fuel Dispenser 10	Point	15.0	
Fuel Dispenser 11	Point	15.3	
Fuel Dispenser 12	Point	15.6	
Fuel Dispenser 13	Point	14.8	
Fuel Dispenser 14	Point	15.0	
Fuel Dispenser 15	Point	15.3	
Receiver R2 Leq,d 20.1 dB(A)			
Fuel Station Vehicle Queue (34 cars)	Area	14.0	
Fuel Dispenser 1	Point	9.9	
Fuel Dispenser 2	Point	10.1	
Fuel Dispenser 3	Point	10.4	
Fuel Dispenser 4	Point	10.6	
Fuel Dispenser 5	Point	4.3	
Fuel Dispenser 6	Point	5.2	
Fuel Dispenser 7	Point	6.3	
Fuel Dispenser 8	Point	10.6	
Fuel Dispenser 9	Point	2.9	
Fuel Dispenser 10	Point	3.1	
Fuel Dispenser 11	Point	3.3	
Fuel Dispenser 12	Point	3.6	
Fuel Dispenser 13	Point	2.6	
Fuel Dispenser 14	Point	2.7	
Fuel Dispenser 15	Point	2.8	
Receiver R3 Leq,d 31.1 dB(A)			
Fuel Station Vehicle Queue (34 cars)	Area	28.9	
Fuel Dispenser 1	Point	14.4	
Fuel Dispenser 2	Point	14.6	
Fuel Dispenser 3	Point	14.9	
Fuel Dispenser 4	Point	15.1	
Fuel Dispenser 5	Point	14.7	
Fuel Dispenser 6	Point	14.9	
Fuel Dispenser 7	Point	15.1	

Costco Visalia
Calculated Noise Levels - 07 Fuel Station

Source	Source type	Leq,d dB(A)	
Fuel Dispenser 8	Point	15.4	
Fuel Dispenser 9	Point	14.9	
Fuel Dispenser 10	Point	15.1	
Fuel Dispenser 11	Point	15.4	
Fuel Dispenser 12	Point	15.6	
Fuel Dispenser 13	Point	15.4	
Fuel Dispenser 14	Point	15.7	
Fuel Dispenser 15	Point	16.0	

Costco Visalia
Source Levels in dB(A) - 08 Fuel Delivery

Name	Source type	Lw dB(A)	
Fuel Delivery Hookup	Point	89.3	

Costco Visalia
Emission calculation road - 08 Fuel Delivery

Road	Vehicle Trips Per Hour Veh/h	
Fuel Delivery - Arriving	1.00	
Fuel Delivery - Arriving	1.00	
Fuel Delivery - Arriving	1.00	
Fuel Delivery - Arriving	1.00	
Fuel Delivery - Leaving	1.00	
Fuel Delivery - Leaving	1.00	
Fuel Delivery - Leaving	1.00	
Fuel Delivery - Leaving	1.00	

Costco Visalia
Calculated Noise Levels - 08 Fuel Delivery

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 31.4 dB(A)			
Fuel Delivery - Arriving	Road	23.8	
Fuel Delivery - Leaving	Road	26.2	
Fuel Delivery Hookup	Point	28.6	
Receiver R2 Leq,d 20.1 dB(A)			
Fuel Delivery - Arriving	Road	13.3	
Fuel Delivery - Leaving	Road	16.8	
Fuel Delivery Hookup	Point	15.4	
Receiver R3 Leq,d 31.5 dB(A)			
Fuel Delivery - Arriving	Road	23.8	
Fuel Delivery - Leaving	Road	23.2	
Fuel Delivery Hookup	Point	29.9	

Costco Visalia
Emission calculation road - 09 Warehouse Delivery (Nighttime)

Road	Vehicle Trips Per Hour Veh/h	
Warehouse Delivery Truck Arriving (W Ent	3.00	
Warehouse Delivery Truck Leaving (S side	3.00	

Costco Visalia
Calculated Noise Levels - 09 Warehouse Delivery (Nighttime)

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 43.8 dB(A)			
Warehouse Delivery Truck Arriving (W Ent	Road	34.3	
Warehouse Delivery Truck Leaving (S side	Road	43.3	
Receiver R2 Leq,d 39.4 dB(A)			
Warehouse Delivery Truck Arriving (W Ent	Road	38.0	
Warehouse Delivery Truck Leaving (S side	Road	33.9	
Receiver R3 Leq,d 30.7 dB(A)			
Warehouse Delivery Truck Arriving (W Ent	Road	28.4	
Warehouse Delivery Truck Leaving (S side	Road	26.9	

Costco Visalia
Source Levels in dB(A) - 10 Carwash

Name	Source type	Lw dB(A)	
Blower	Point	100.4	

Costco Visalia
Calculated Noise Levels - 10 Carwash

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 34.3 dB(A)			
Blower	Point	34.3	
Receiver R2 Leq,d 23.7 dB(A)			
Blower	Point	23.7	
Receiver R3 Leq,d 37.4 dB(A)			
Blower	Point	37.4	

AES
ACOUSTICAL ENGINEERING SERVICES

Off-Site Traffic Noise Calculations
Project: Costco Visalia Project

Traffic Distribution as % of ADT				
Vehicle Type	**Day**	**Eve**	**Night**	**Sub total**
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

PHV to ADT factor 10%

PHASE 1 NO PROJECT

Roadway Segment	Roadway Width*, ft	Distance to Edge of Roadway, ft	Distance to Centerline, feet	Speed mph	Traffic Volume PHV	Traffic Volume ADT	PHV to ADT factor	Barrier Atten.	Site Adjust., dBA	24-Hour CNEL
Shirk Street										
- Between Sedona Ave. and Riggin Ave.	60	10	40	45	323	3,230	10%	0	0	64.4
Riggin Avenue										
- Between Shirk St. and Denton St.	80	10	50	45	973	9,730	10%	0	0	68.2

* Estimated based on Google Earth map.

** Calculated using FHWA's TNM Version 2.5 Computer Noise Model.

Date Printed: 12/5/2023

AES
ACOUSTICAL ENGINEERING SERVICES

Off-Site Traffic Noise Calculations
Project: Costco Visalia Project

Traffic Distribution as % of ADT				
Vehicle Type	**Day**	**Eve**	**Night**	**Sub total**
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

PHV to ADT factor 10%

PHASE 1 WITH PROJECT

Roadway Segment	Roadway Width*, ft	Distance to Edge of Roadway, ft	Distance to Centerline, feet	Speed mph	Traffic Volume PHV	Traffic Volume ADT	PHV to ADT factor	Barrier Atten.	Site Adjust., dBA	24-Hour CNEL
Shirk Street										
- Between Sedona Ave. and Riggin Ave.	60	10	40	45	609	6,090	10%	0	0	67.2
Riggin Avenue										
- Between Shirk St. and Denton St.	80	10	50	45	1,382	13,820	10%	0	0	69.8

* Estimated based on Google Earth map.

** Calculated using FHWA's TNM Version 2.5 Computer Noise Model.

Date Printed: 12/5/2023

AES
ACOUSTICAL ENGINEERING SERVICES

Off-Site Traffic Noise Calculations
Project: Costco Visalia Project

Traffic Distribution as % of ADT				
Vehicle Type	**Day**	**Eve**	**Night**	**Sub total**
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

PHV to ADT factor 10%

PHASE 3 NO PROJECT

Roadway Segment	Roadway Width*, ft	Distance to Edge of Roadway, ft	Distance to Centerline, feet	Speed mph	Traffic Volume PHV	Traffic Volume ADT	PHV to ADT factor	Barrier Atten.	Site Adjust., dBA	24-Hour CNEL
Shirk Street										
- Between Sedona Ave. and Riggin Ave.	60	10	40	45	576	5,760	10%	0	0	67.0
Riggin Avenue										
- Between Shirk St. and Denton St.	80	10	50	45	2,351	23,510	10%	0	0	72.1

* Estimated based on Google Earth map.

** Calculated using FHWA's TNM Version 2.5 Computer Noise Model.

Date Printed: 12/5/2023

AES
ACOUSTICAL ENGINEERING SERVICES

Off-Site Traffic Noise Calculations
Project: Costco Visalia Project

Traffic Distribution as % of ADT				
Vehicle Type	**Day**	**Eve**	**Night**	**Sub total**
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

PHV to ADT factor 10%

PHASE 3 WITH PROJECT

Roadway Segment	Roadway Width*, ft	Distance to Edge of Roadway, ft	Distance to Centerline, feet	Speed mph	Traffic Volume PHV	Traffic Volume ADT	PHV to ADT factor	Barrier Atten.	Site Adjust., dBA	24-Hour CNEL
Shirk Street										
- Between Sedona Ave. and Riggin Ave.	60	10	40	45	901	9,010	10%	0	0	68.9
Riggin Avenue										
- Between Shirk St. and Denton St.	80	10	50	45	2,779	27,790	10%	0	0	72.8

* Estimated based on Google Earth map.

** Calculated using FHWA's TNM Version 2.5 Computer Noise Model.

Date Printed: 12/5/2023

Exhibit "K"

Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
Agricultural & Forestry Resources				
AG – 1: Prior to the issuance of grading or building permits, the Project proponent shall mitigate impacts for loss of up to 478 acres of Prime Farmland and Farmland of Statewide Importance on the Project site at a 1:1 ratio. The amount of land requiring mitigation shall correspond to the amount of land associated with the issuance of the grading or building permit, or for residential land associated with a subdivision map, the amount of land associated with the subdivision map. The Project proponent shall implement one or more of the following measures to mitigate the loss: Payment of in-lieu fees, mitigation banks, fee title acquisition, and/or conservation easements, on land(s) within the Southern San Joaquin Valley of California, specifically within Kern County, Tulare County, Kings County, Fresno County, or Madera County. The City shall require, at a minimum: evidence that the preserved land has adequate water supply, agricultural zoning, evidence of land encumbrance documentation, documentation that the easement/regulations are permanent and monitored, and documentation that the mitigation strategy is appropriately endowed. This mitigation shall be verified by the City prior to issuance of grading or building permits. Should the City of Visalia develop an Agricultural Mitigation Program, the Project proponent, at its election, may mitigate for the loss of agricultural land through compliance with the Program that is adopted by the City in lieu of mitigating on a 1:1 ratio as described above.	Project Applicant	Prior to issuance of grading or building permits	City of Visalia	

Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
AG – 2: **Reduce Conflicts Between Urban and Agricultural Uses** In order to reduce potential conflicts between urban and agricultural uses, the following measures shall be implemented: • Potential residents shall be notified about possible exposure to agricultural chemicals at the time of purchase / lease of property within the development. • A Right-to-Farm Covenant shall be recorded on each tract map or be made a condition of each tract map to protect continued agricultural practices in the area. • Potential residents shall be informed of the Right-to-Farm Covenant at the time of purchase / lease of property within the development.	Project Applicant	Prior to issuance of certificates of occupancy	City of Visalia	
Air Quality				
AIR-2A: This measure shall be applied to all development under the proposed Specific Plan to reduce emissions from construction. Before a construction permit is issued for the proposed Project, the Project applicant, Project sponsor, or construction contractor shall provide compliance with the following requirements to the City of Visalia Planning Department: • Where portable diesel engines are used during construction, all off-road equipment with engines greater than 75 horsepower shall have engines that meet either EPA or ARB Tier 4 Final off-road emission standards except as otherwise specified herein. If engines that comply with Tier 4 Final off-road emission standards	Project Applicant	Prior to issuance of grading or building permits	City of Visalia	

Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
are not commercially available, then the construction contractor shall use the next cleanest piece of off-road equipment that is commercially available. For purposes of this mitigation measure, "commercially available" shall mean the equipment at issue is available taking into consideration factors such as (i) critical-path timing of construction; and (ii) geographic proximity to the Project site of equipment. If the relevant equipment is determined by the Project applicant to not be commercially available, the contractor can confirm this conclusion by providing letters from at least two rental companies for each piece of off-road equipment that is at issue.				
AIR-2B: The following measure shall be applied to all development under the proposed Specific Plan during construction to facilitate the use of electric landscaping equipment during Project operations: • Provide electrical outlets on the outside of buildings or in other accessible areas to facilitate the use of electrically powered landscape equipment.	Project Applicant	During construction	City of Visalia	
AIR-3A: Prior to future discretionary approval for commercial or commercial mixed-use projects, the City of Visalia shall evaluate potential health risk impacts from new development proposals for any individual development projects within 1,000 feet of an existing or planned sensitive land use (e.g., residential, schools, hospitals, or nursing homes), as measured from the property line of the project to the property line of the nearest sensitive use. Such projects shall submit the following to the City of Visalia's Planning Division:	Project Applicant	Prior to future discretionary approval for commercial or commercial mixed-use projects	City of Visalia	

Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
A Health Risk Prioritization Screening Analysis or a Health Risk Assessment (HRA) for the project's potential to expose sensitive receptors to elevated levels of TACs during project construction and operations prepared in accordance with SJVAPCD guidance. If the HRA shows that the incremental health risks exceed their respective thresholds, as established by the SJVAPCD at the time a project is considered, the project applicant shall be required to identify and incorporate commercially feasible mitigation including appropriate enforcement mechanisms to reduce risks to an acceptable level.				
Biological Resources				
BIO-1: Protect Sanford's arrowhead If the Project will impact Modoc Ditch, Mosquito Creek – Cross Creek, or the unnamed canal, a qualified biologist shall conduct a pre-construction survey of the feature(s) to be impacted on and within 50 feet of the Project site within the May–October blooming period of Sanford's arrowhead. The survey shall be conducted during the blooming period concurrent with the start of construction or immediately preceding the start of construction if construction will be initiated between November and April. If Sanford's arrowhead is detected, the qualified biologist shall establish an exclusion zone of 50 feet between any population and the area of direct or indirect impacts. If a 50-foot exclusion zone cannot be established, a site-specific plan to minimize the potential for Project activities to affect individual plants shall be developed by the qualified biologist and implemented in consultation with the CDFW. Such a plan could involve salvaging and relocating affected plants.	Project Applicant	Prior to issuance of grading or building permits	City of Visalia and CDFW	

	Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
BIO-2:	**Protect burrowing owl** Conduct focused burrowing owl surveys to assess the presence/absence of burrowing owl in accordance with the *Staff Report on Burrowing Owl Mitigation*[1] and *Burrowing Owl Survey Protocol and Mitigation Guidelines*.[2] These involve conducting four pre-construction survey visits. If a burrowing owl or sign of burrowing owl use (e.g., feathers, guano, pellets) is detected on or within 500 feet of the Project site, and the qualified biologist determines that Project activities would disrupt the owl(s), a construction-free buffer, limited operating period, or passive relocation shall be implemented in consultation with the CDFW.	Project Applicant	Prior to issuance of grading or building permits	City of Visalia and CDFW	
BIO-3:	**Protect nesting Swainson's hawks** To the extent practicable, construction shall be scheduled to avoid the Swainson's hawk nesting season, which extends from March through August. If it is not possible to schedule construction between September and February, a qualified biologist shall conduct surveys for Swainson's hawk in accordance with the Swainson's Hawk	Project Applicant	Prior to issuance of grading or building permits	City of Visalia and CDFW	

[1] California Department of Fish and Game (CDFG). 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency. March 7, 2012. 34 pp.

[2] California Burrowing Owl Consortium (CBOC). 1997. Burrowing Owl Survey Protocol and Mitigation Guidelines. Pages 171–177, *in* Lincer, J. L. and K. Steenhof (editors). 1997. The Burrowing Owl, its Biology and Management. Raptor Research Report Number 9.

	Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
	Technical Advisory Committee's *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*.[3] These methods require six surveys, three in each of the two survey periods, prior to project initiation. Surveys shall be conducted within a minimum 0.5-mile radius around the Project site. If an active Swainson's hawk nest is found within 0.5 miles of the Project site, and the qualified biologist determines that Project activities would disrupt the nesting birds, a construction-free buffer or limited operating period shall be implemented in consultation with the CDFW.				
BIO-4:	**Compensate for loss of Swainson's hawk foraging habitat** Compensate for loss of Swainson's hawk foraging habitat (i.e., the fallow fields on the Project site) in accordance with the CDFW *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California*.[4] The CDFW requires that projects adversely affecting Swainson's hawk foraging habitat provide Habitat Management (HM) lands to the department. Projects within 1 mile of an active nest shall provide one acre of HM lands for each acre of development authorized (1:1 ratio). Projects within 5 miles of	Project Applicant	Prior to issuance of grading or building permits	City of Visalia and CDFW	

[3] Swainson's Hawk Technical Advisory Committee (SWTAC). 2000. Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. 5 pages.

[4] California Department of Fish and Game (CDFG). 1994. Staff Report Regarding Mitigation for Impacts to Swainson's Hawk (*Buteo swainsoni*) in the Central Valley of California. California Nongame Bird and Mammal Section Report #94.18.

	Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
	an active nest but greater than 1 mile from the nest shall provide 0.75 acres of HM lands for each acre of urban development authorized (0.75:1 ratio). And projects within 10 miles of an active nest but greater than 5 miles from an active nest shall provide 0.5 acres of HM lands for each acre of urban development authorized (0.5:1 ratio). No compensation is required if an active nest is not found within 10 miles of the Project site.				
BIO-5:	**Protect nesting birds** To the extent practicable, construction shall be scheduled to avoid the nesting season, which extends from February through August. If it is not possible to schedule construction between September and January, pre-construction surveys for nesting birds shall be conducted by a qualified biologist to ensure that no active nests will be disturbed during the implementation of the Project. A pre-construction survey shall be conducted no more than 14 days prior to the initiation of construction activities. During this survey, the qualified biologist shall inspect all potential nest substrates in and immediately adjacent to the impact areas. If an active nest is found close enough to the construction area to be disturbed by these activities, the qualified biologist shall determine the extent of a construction-free buffer to be established around the nest. If work cannot proceed without disturbing the nesting birds, work may need to be halted or redirected to other areas until nesting and fledging are	Project Applicant	Prior to issuance of grading or building permits	City of Visalia and CDFW	

	Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
	completed or the nest has otherwise failed for non-construction related reasons.				
Cultural Resources					
CUL – 1:	In the event that historical or archaeological cultural resources are discovered during project-related activities or decommissioning, operations shall stop within 100 feet of the find, and a qualified archeologist shall determine whether the resource requires further study. The qualified archaeologist shall determine the measures that shall be implemented to protect the discovered resources including, but not limited to, excavation of the finds and evaluation of the finds in accordance with § 15064.5 of the CEQA Guidelines. Measures may include, but are not limited to, avoidance, preservation in-place, recordation, additional archaeological resting, and data recovery, among other options. Any previously undiscovered resources found during project-related activities within the project area shall be recorded on appropriate Department of Parks and Recreation forms and evaluated for significance. No further ground disturbance shall occur in the immediate vicinity of the discovery until approved by the qualified archaeologist. The Lead Agency, along with other relevant or tribal officials, shall be contacted upon the discovery of cultural resources to begin coordination on the disposition of the find(s). Treatment of any significant cultural resources shall be undertaken with the approval of the Lead Agency.	Project Applicant	During construction	City of Visalia	

	Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
CUL – 2:	In order to ensure that the proposed Project does not impact buried human remains during Project construction, the Project proponent shall be responsible for on-going monitoring of Project construction. Prior to the issuance of any grading permit, the Project proponent shall provide the City with documentation identifying construction personnel that will be responsible for on-site monitoring. If buried human remains are encountered during construction, further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall be halted until the Tulare County coroner is contacted and the coroner has made the determinations and notifications required pursuant to Health and Safety Code Section 7050.5. If the coroner determines that Health and Safety Code Section 7050.5(c) require that he give notice to the Native American Heritage Commission, then such notice shall be given within 24 hours, as required by Health and Safety Code Section 7050.5(c). In that event, the NAHC will conduct the notifications required by Public Resources Code Section 5097.98. Until the consultations described below have been completed, the landowner shall further ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices where Native American human remains are located, is not disturbed by further development activity until the landowner has discussed and conferred with the Most Likely Descendants on all reasonable options regarding the descendants' preferences and treatments, as prescribed by Public Resources Code Section 5097.98(b). The NAHC will mediate any disputes regarding treatment of remains in accordance with Public Resources Code Section 5097.94(k). The landowner shall be entitled to exercise rights established by	Project Applicant	Prior to issuance of any grading permit and ongoing during construction	City of Visalia	

	Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
	Public Resources Code Section 5097.98(e) if any of the circumstances established by that provision become applicable.				
Geology & Soils					
GEO – 1	In order to reduce on-site erosion due to project construction and operation, an erosion control plan and Storm Water Pollution Prevention Plan (SWPPP) shall be prepared for the site preparation, construction, and post-construction periods by a registered civil engineer or certified professional. The erosion control plan shall incorporate best management practices consistent with the requirements of the National Pollution Discharge Elimination System (NPDES). The erosion component of the plan must at least meet the requirements of the SWPPP required by the Central Valley RWQCB. If earth disturbing activities are proposed between October 15 and April 15, these activities shall be limited to the extent feasible to minimize potential erosion related impacts. Additional erosion control measures may be implemented in consultation with the City of Visalia. Prior to the issuance of any permit, the Project proponent shall submit detailed plans to the satisfaction of the City of Visalia. The components of the erosion control plan and SWPPP shall be monitored for effectiveness by the City of Visalia. Erosion control measures may include, but not be limited to, the following: i. Limit disturbance of soils and vegetation disturbance removal to the minimum area necessary for access and construction; ii. Confine all vehicular traffic associated with construction to the right-of-way of designated access roads; iii. Adhere to construction schedules designed to avoid periods of heavy precipitation or high winds;	Project Applicant	Prior to issuance of grading permits	City of Visalia	

	Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
	iv. Ensure that all exposed soil is provided with temporary drainage and soil protection when construction activity is shut down during the winter periods; and v. Inform construction personnel prior to construction and periodically during construction activities of environmental concerns, pertinent laws and regulations, and elements of the proposed erosion control measures.				
GEO – 2	The project proponent shall retain a registered geotechnical engineer to prepare a design level geotechnical analysis prior to the issuance of any grading and/or building permit. The design-level analysis shall address site preparation measures and foundation design requirements of the project. The design-level analysis shall be prepared to the satisfaction of the City of Visalia. Final design-level project plans shall be designed in accordance with the approved geotechnical analysis. This shall include certification of engineered fills and subgrade preparation through monitoring of earthwork and compaction testing by a geotechnical engineer during construction.	Project Applicant	Prior to issuance of grading or building permits	City of Visalia	
Hazards & Hazardous Materials					
HAZ-1	Prior to the issuance of grading or building permits, the Project proponent shall conduct a subsurface investigation of the Project site to evaluate the potential for elevated residual concentrations of agricultural chemicals on the site. If remedial action is required, the Project will be responsible for cleanup and any remedial actions. For portions of the project site where	Project Applicant	Prior to issuance of grading or building permits	City of Visalia	

Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
there is known contamination, a project specific site management plan should be prepared under the oversight of the Water Board and/or DTSC, as appropriate. The plan shall include measures for identifying, testing, and managing soil and groundwater suspected of or known to contain hazardous materials. The plan shall: (1) provide procedures for evaluating, handling, storing, testing, and disposing of soil and groundwater during project excavation and dewatering activities, respectively; (2) describe required worker health and safety provisions for all workers potentially exposed to hazardous materials in accordance with State and federal worker safety regulations; and (3) designate personnel responsible for implementation of the plan. For sites with potential residual contamination that are planned for development with an occupied building, a vapor intrusion assessment shall be performed by a licensed environmental professional. If the results of the vapor intrusion assessment indicate the potential for significant vapor intrusion into an occupied building, project design shall include vapor controls or source removal, as appropriate, in accordance with regulatory agency requirements. Soil vapor mitigations or controls could include vapor barriers, passive venting, and/or active venting Evidence of compliance shall be submitted to the City of Visalia department of Community Development Department.				

	Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
HAZ – 2	Prior to the issuance of grading or building permits, the Project proponent or contractor shall provide a site plan that clearly delineates the locations of all known oil wells. A copy of the map shall be submitted to the California Department of Conservation, Geologic Energy Management Division (CalGEM) for review and evaluation. The Project proponent will work with CalGEM to implement any remedial actions that may result from CalGEM's review of the on-site abandoned well. Evidence of compliance shall be submitted to the City of Visalia department of Community Development Department. In addition, the Project proponent shall include information about any abandoned wells within the Project site in the Tulare County Recorder's title information of the Project site.	Project Applicant	Prior to issuance of grading or building permits	City of Visalia	
HAZ–3	In the event that abandoned or unrecorded wells are uncovered or damaged during excavation or grading activities, all work shall cease in the vicinity of the well, and the California Department of Conservation, Geologic Energy Management Division (CalGEM) shall be contacted for requirements and approval. CalGEM may determine that remedial plugging operations may be required. Copies of said approvals shall be submitted to the City of Visalia Community Development Department	Project Applicant	During grading and construction activities	City of Visalia	
Noise					
NOI - 1:	Prior to issuance of building permits for development within the Neighborhood Commercial Zone, the City of Visalia will determine if a detailed acoustical study shall be prepared by a certified professional to document potential impacts to onsite	Project Applicant	Prior to issuance of building permits	City of Visalia	

	Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
	and offsite noise-sensitive land uses (as determined by the City of Visalia's General Plan and Municipal Code thresholds). When specific uses within the Neighborhood Commercial Zone are proposed that could result in a noise-related conflict between a commercial or other stationary noise source and existing or proposed noise-sensitive receptor, an acoustical analysis shall be required by the City of Visalia that quantifies Project-related noise levels and recommends appropriate mitigation measures to achieve compliance with the City's noise standards. Potential impacts in exceedance of the City of Visalia's standards shall require incorporation of mitigation such as increased setbacks, sound walls, equipment enclosures, site design, and enhanced building materials to reduce impacts to levels below the City of Visalia standards. Development that cannot incorporate mitigation to reduce impacts to acceptable City of Visalia standards shall not be approved. Evidence of compliance with this mitigation measure shall be provided to the City of Visalia prior to issuance of building permits.				
NOI - 2:	For Project components involving new sensitive receptors (residential land uses) within the cumulative 65 dB Ldn noise contours of adjacent roadway segments (Avenue 320, Shirk Road, Riggin Avenue, and Akers Street as identified in Table 3.13-12), the City of Visalia will require construction of block walls to achieve noise attenuation to below the City's noise thresholds. The City of Visalia Design and Improvement Standards provide guidelines and standards for the construction of block walls, within the City of Visalia. Standard wall heights permitted by the City of Visalia range between 6-foot to 7- foot	Project Applicant	Prior to issuance of grading or building permits	City of Visalia	

	Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
	in height. Depending on the height and geometric relationship between the roadway and the receiver location, walls of this height range would be typically expected to provide between approximately 5-6 dB of noise attenuation. While specific wall height requirements would generally be determined once final lot layout designs and elevations are known, wall heights of up to 7 feet will be sufficient to mitigate traffic noise within all proposed residential land uses, to below the City's acceptable maximum allowed noise exposure levels. Evidence of compliance with this mitigation measure shall be provided to the City of Visalia prior to issuance of building permits.				
NOI - 3:	For the proposed drive-through car wash facility in the Mixed Use Commercial Zone, the Project shall implement an IDC 100 horsepower Predator Blower System running at 55Hz with a 10' wall with AcoustiBlok lining. Evidence of compliance with this mitigation measure shall be provided to the City of Visalia prior to issuance of occupancy permits.	Project Applicant	Prior to issuance of building permits	City of Visalia	
NOI - 4:	Bus movements occurring off public roadways (but on school campus) shall not occur within ninety feet of any residential outdoor activity area. Evidence of compliance with this mitigation measure shall be provided to the City of Visalia prior to issuance of building permits.	Project Applicant	Prior to issuance of building permits	City of Visalia	
Transportation					

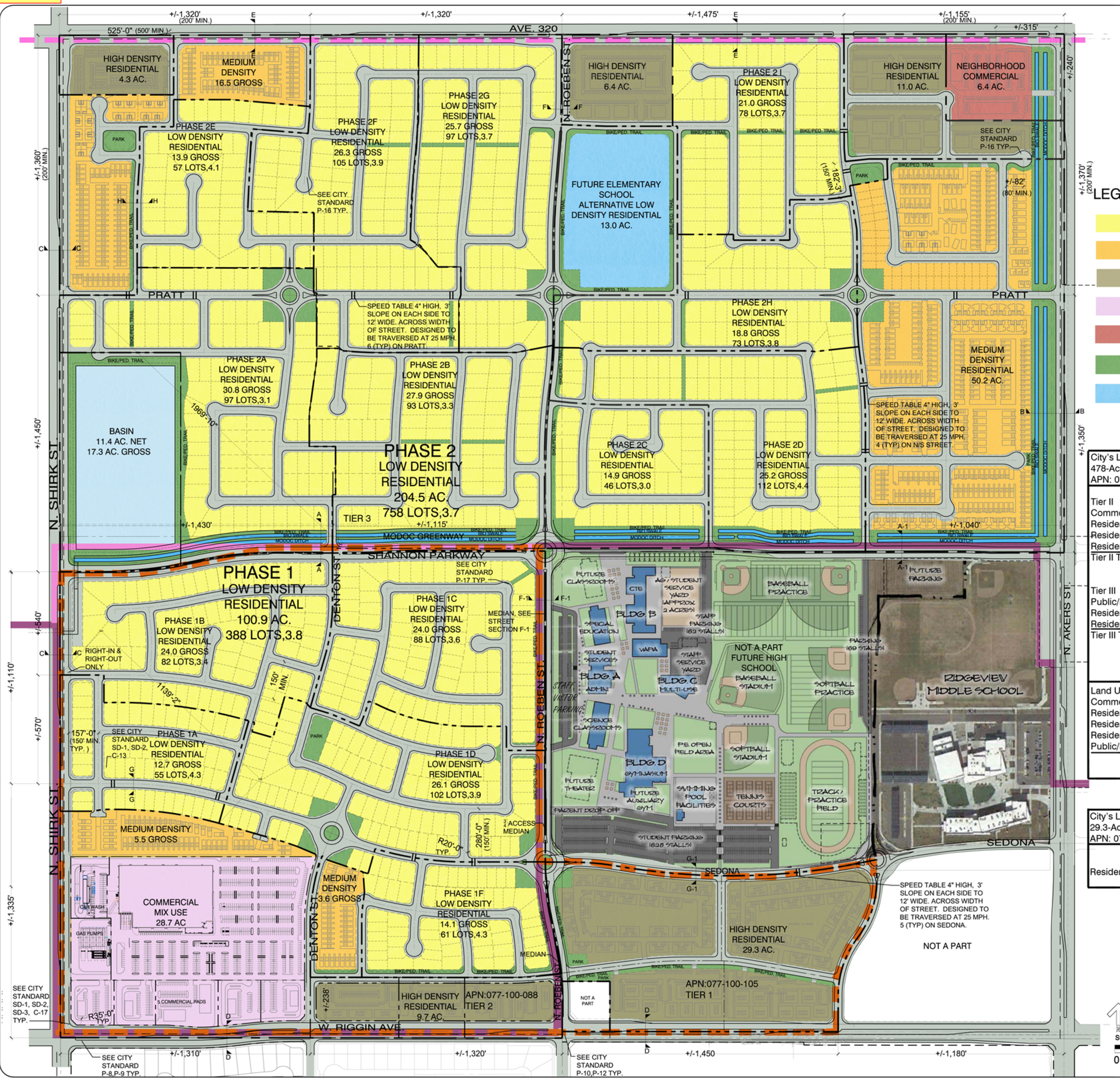
Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
TRA-1: Prior to issuance of building permits, the Project shall pay into the City of Visalia's Transportation Impact Fee (TIF) program. The TIF amount will be calculated based on the City's adopted fee schedule in place at the time of the application of building permits. This will be itemized and enforced through conditions of approval or a development agreement, at the discretion of the City.	Project Applicant	Prior to issuance of building permits	City of Visalia	
TRA-2: Prior to the issuance of building permits, the Project will be responsible for paying its pro-rata fair share cost percentages and/or constructing the recommended on-site improvements and site-adjacent improvements identified in Tables 3.17-11, 3.17-15 and 3.17-16, subject to reimbursement for the costs that are in excess of the Project's equitable responsibility as determined by the City. This will be itemized and enforced through conditions of approval or a development agreement, at the discretion of the City.	Project Applicant	Prior to issuance of building permits	City of Visalia	
TRA-3: Prior to the issuance of construction or building permits, the Project developer shall: Prepare and submit a Construction Traffic Control Plan to City of Visalia, as appropriate, for approval. The Construction Traffic Control Plan shall be prepared in accordance with both the California Department of Transportation Manual on Uniform Traffic Control Devices and Work Area Traffic Control Handbook and shall include, but not be limited to, the following issues: a. Timing of deliveries of heavy equipment and building materials;	Project Applicant	Prior to issuance of construction or building permits	City of Visalia	

	Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
	b. Directing construction traffic with a flag person; c. Placing temporary signing, lighting, and traffic control devices if required, including, but not limited to, appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic; d. Ensuring access for emergency vehicles to the project site; e. Temporarily closing travel lanes or delaying traffic during materials delivery, transmission line stringing activities, or any other utility connections; f. Maintaining access to adjacent property; and, g. Specifying both construction-related vehicle travel and oversize load haul routes, minimizing construction traffic during the AM and PM peak hour, distributing construction traffic flow across alternative routes to access the project sites, and avoiding residential neighborhoods to the maximum extent feasible.				
Tribal Cultural Resources					
TRI-1:	Prior to any ground disturbance, a surface inspection of the site shall be conducted by a Tribal Monitor. The Tribal Cultural Staff shall monitor the site during grading activities. The Tribal Staff shall provide pre-project-related information to supervisory personnel and any excavation contractor, which will include information on potential cultural material finds and on the procedures to be enacted if resources are found. Prior to any ground disturbance, the applicant shall offer the Santa Rosa Indian Community of the Santa Rosa Rancheria the opportunity to provide a Native American Monitor during ground-disturbing	Project Applicant	Prior to ground disturbance	City of Visalia	

	Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
	activities. Tribal participation would be dependent upon the availability and interest of the tribe.				
TRI-2:	In the event that historical or archaeological cultural resources are discovered during project-related activities or decommissioning, operations shall stop within 100 feet of the find, and a qualified archeologist shall determine whether the resource requires further study. The qualified archaeologist shall determine the measures that shall be implemented to protect the discovered resources including, but not limited to, excavation of the finds and evaluation of he finds and evaluation of the finds in accordance with § 15064.5 of the CEQA Guidelines. Measures may include avoidance, preservation in-place, recordation, additional archaeological resting, and data recovery, among other options. Any previously undiscovered resources found during project-related activities within the project area shall be recorded on appropriate CA Department of Parks and Recreation forms and evaluated for significance. No further ground disturbance shall occur in the immediate vicinity of the discovery until approved by the qualified archaeologist. The Lead Agency, along with other relevant or tribal officials, shall be contacted upon the discovery of cultural resources to begin coordination on the disposition of the find(s). Treatment of any significant cultural resources shall be undertaken with the approval of the Lead Agency.	Project Applicant	Ongoing	City of Visalia	
TRI-3:	Upon coordination with the Lead Agency, any archaeological artifacts recovered shall be donated to an appropriate tribal	Project Applicant	Ongoing	City of Visalia	

	Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
	custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines.				
TRI-4:	If human remains are discovered during project-related activities or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol, guidelines, and channels of communication outlined by the Native American Heritage Commission, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987) shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of discovery of human remains, at the direction of the County Coroner.	Project Applicant	Ongoing	City of Visalia	

Exhibit "L"



TENTATIVE MAPS TO BE SUBMITTED SEPARATELY FOR SITE PLAN REVIEW.

LEGEND

- Low Density Residential (2-10 hu/ac)
- Medium Density Residential (10-15 hu/ac)
- High Density Residential (15-35 hu/ac)
- Commercial Mix Use
- Commercial Neighborhood
- Modoc Greenway Park/ Park/ Bike/Ped. Trail
- School Site
- Tier 1
- Tier 2
- Tier 3
- Phase 1

City's Land Use Designations 478-Acre Site APN: 077-100-088		
Tier II	Acres	Units
Commercial Neighborhood	11.4	
Residential Low Density	59.2	118-592
Residential Medium Density	47	470-705
Residential High Density	31.4	471-1,099
Tier II Total	149	
Tier III		
Public/Institutional	9.9	
Residential Low Density	290.3	580-2,903
Residential Medium Density	28.8	288-432
Tier III Total	329	
Total Acres	478	
Land Use Total:		
Commercial Neighborhood	11.4	
Residential Low Density	349.5	699-3,495
Residential Medium Density	75.8	758-1,137
Residential High Density	31.4	471-1,099
Public/Institutional	9.9	
Total Acres	478	

Proposed Land Use Designations 478-Acre Site APN: 077-100-088			
Tier II	Acres	Units	Park ac
Commercial Mix Use	28.7		
Residential Low Density	100.9	388	(2.6)
Residential Medium Density	9.1	91	(0.1)
Residential High Density	9.7	146	
Tier II Total	148.4	625	(2.7)
Tier III			
Public/Institutional	13.0		(0.9)
Residential Low Density	204.5	758	(9.0)
Residential Medium Density	66.7	667	(3.4)
Residential High Density	21.7	326	(0.2)
Commercial Neighborhood	6.4		(0.3)
Basin	17.3		
Tier III Total	329.6	1,751	(13.8)
Total Acres	478		
Land Use Total:			
Commercial Mix Use	28.7		
Residential Low Density	305.4	1,146	(11.6)
Residential Medium Density	75.8	758	(3.5)
Residential High Density	31.4	472	(0.2)
Public/Institutional	13.0		(0.9)
Commercial Neighborhood	6.4		(0.3)
Basin	17.3		
Total Acres	478	2,376	(16.5)

City's Land Use Designations 29.3-Acre Site APN: 077-100-105		
	Acres	hu/ac
Residential High Density	29.3	440-1,025

Proposed Land Use Designations 29.3-Acre Site APN: 077-100-105			
	Acres	hu/ac	Park ac
Residential High Density	29.3	440	(0.8)

Carleton Acres

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REVISIONS
- 05-26-21 Site Plan Approved
- 04-28-22 Site Plan Submittal

Project: SITE PLAN REVIEW
CARLETON ACRES

Location: RIGGIN BETWEEN SHIRK AND AKERS
VISALIA, CA

CONCEPTUAL USE PLAN

A1.2

City Council Resolution Certifying EIR

City of Visalia

City Clerk's Office

220 N. Santa Fe, Visalia, CA 93292

Tel: (559) 713-4512

Certification of City of Visalia Resolution

I, Michelle Nicholson, Chief Deputy City Clerk of the City of Visalia, State of California, hereby certify the foregoing to be a full, true, and correct copy of:

RESOLUTION NO. 2023-48

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF VISALIA CERTIFYING THE ENVIRONMENTAL IMPACT REPORT FOR THE CARLETON ACRES SPECIFIC PLAN PROJECT THAT INCLUDES SPECIFIC PLAN NO. 2021-13, GENERAL PLAN AMENDMENT NO. 2021-14, ANNEXATION NO. 2021-05, CARLETON ACRES PHASE 1 TENTATIVE SUBDIVISION MAP NO. 5590, AND TENTATIVE PARCEL MAP NO. 2023-04; STATE CLEARINGHOUSE NO. 2021050418

Dated: October 17, 2023

Michelle Nicholson
Chief Deputy City Clerk

RESOLUTION NO. 2023-48

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF VISALIA CERTIFYING THE ENVIRONMENTAL IMPACT REPORT FOR THE CARLETON ACRES SPECIFIC PLAN PROJECT THAT INCLUDES SPECIFIC PLAN NO. 2021-13, GENERAL PLAN AMENDMENT NO. 2021-14, ANNEXATION NO. 2021-05, CARLETON ACRES PHASE 1 TENTATIVE SUBDIVISION MAP NO. 5590, AND TENTATIVE PARCEL MAP NO. 2023-04: STATE CLEARINGHOUSE NO. 2021050418

WHEREAS, the City Council of the City of Visalia has reviewed and considered the Final Environmental Impact Report prepared on the Carleton Acres Specific Plan project that includes Specific Plan No. 2021-13, General Plan Amendment No. 2021-14, Annexation No. 2021-05, Carleton Acres Phase 1 Tentative Subdivision Map No. 5590, and Tentative Parcel Map No. 2023-04 ("Final EIR"); and,

WHEREAS, the Draft Environmental Impact Report ("Draft EIR") was released on May 4, 2023, for circulation for a period of 45 days; and,

WHEREAS, the Final EIR was released on September 1, 2023, and consists of the Draft EIR and the revisions of, and additions to, the Draft EIR; the written comments and recommendations received on the Draft EIR; the written responses of the City of Visalia to significant environmental points raised in the review and consultation process; errata to the foregoing; and other information added by the City of Visalia as specified in the record; and

WHEREAS, the Final EIR analyzes and evaluates a series of actions for approval and development of a mixed use community consisting of residential, commercial, and public uses (the "Project"). The approval actions analyzed in the Final EIR include amendments to the Visalia General Plan, adoption of the Carleton Acres Specific Plan, annexation of certain property to the City of Visalia, and permits and approvals pursuant to the Visalia Zoning and other Ordinances for Phase 1 development including tentative subdivision map approval, tentative parcel map approval, conditional use permits, grading and building permits; and

WHEREAS, the Planning Commission of the City of Visalia, after ten (10) days published notice, held a public hearing on the Final EIR and the Project on September 11, 2023; and

WHEREAS, the City Council of the City of Visalia, after ten (10) days published notice, held a public hearing on the Final EIR and the Project on October 2, 2023; and

WHEREAS, the California Environmental Quality Act (CEQA) requires that, in connection with the approval of a project for which an EIR has been prepared which identifies one or more significant effects, the decision-making agency make certain findings regarding those effects.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF VISALIA AS FOLLOWS:

1. THE CITY COUNCIL HEREBY CERTIFIES THAT (A) the Final EIR for the Carleton Acres Specific Plan has been completed in compliance with the California Environmental Quality Act ("CEQA"); (B) the Final EIR was presented to the City Council and the City Council reviewed and considered the information contained in the Final EIR prior to approving the Project; and (C) the Final EIR reflects the independent judgment and analysis of the City of Visalia, as Lead Agency for the Project.

2. THE CITY COUNCIL hereby finds, in connection with certification of the Final EIR, that:

A. Full and fair public hearings have been held on the Environmental Impact Report and the City Council having considered all comments received thereon, said Environmental Impact Report is hereby determined to be adequate and complete.

B. Information added to the EIR after public notice was given of the availability of the Draft EIR for public review is not significant new information and does not change the EIR in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the Project or a feasible way to mitigate or avoid such an effect that the Project's proponents have declined to implement. The information added to and made a part of the Final EIR merely clarifies or amplifies or makes insignificant modifications to the Draft EIR. The EIR refinements and modifications do not involve substantial changes which will require major revisions of the Draft EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects. No new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the Draft EIR was completed, exists to show new impacts not considered in the Draft EIR or any substantial increase in the severity of any environmental impacts considered in the Draft EIR. Accordingly, the City Council hereby finds and determines that recirculation of the Final EIR for further public review and comment is not necessary or warranted.

3. THE CITY COUNCIL hereby makes the findings set forth in the following FACTS, FINDINGS, AND STATEMENT OF OVERRIDING CONSIDERATIONS with respect to the significant effects on the environment and approval of the Project, with the stipulation that (a) all information in these findings is intended as a summary of the full administrative record supporting the Final EIR, which full administrative record is available for review through the City Planner, Community Development Department, at his office at 315 East Acequia Street, Visalia, 93291, and (b) any mitigation measures and/or alternatives that were suggested by the commenters on the Draft EIR and were not adopted as part of the Final EIR are hereby expressly rejected for the reasons stated in the findings and in the responses to comments set forth in the Final EIR and elsewhere on the record.

4. THE CITY COUNCIL hereby adopts the following FACTS, FINDINGS, AND STATEMENT OF OVERRIDING CONSIDERATIONS, and in doing so, hereby determines that the Final EIR prepared for the Project is adequate and complete pursuant to the requirements of the California Environmental Quality Act, and certifies it.

FACTS, FINDINGS, AND STATEMENT OF OVERRIDING CONSIDERATIONS

1.0. Introduction

The City Council of the City of Visalia (City), in approving the proposed Carleton Acres Specific Plan Project (the Project or proposed Project), makes the Findings described herein and adopts the Statement of Overriding Considerations presented at the end of the Findings. The Draft Environmental Impact Report (State Clearinghouse #2021050418) was prepared by the City acting as lead agency pursuant to the California Environmental Quality Act (CEQA). Hereafter, unless specifically identified, the Notice of Preparation (NOP), Notice of Availability & Completion (NOA/NOC), Draft Environmental Impact Report (DEIR or Draft EIR), Appendices, Technical Studies, Final EIR containing Responses to Comments, and the Mitigation Monitoring and Reporting Program (MMRP) will be referred to collectively herein as the "EIR". These Findings are based on the entire record before the City Council, including the EIR. The City Council adopts the facts and analyses in the EIR, which are summarized below for convenience. The omission of some detail or aspect of the EIR does not mean that it has been rejected by the City.

2.0 Project Summary

2.1 Project Description

The Project Applicant is proposing a Specific Plan to develop approximately 507-acres of land into a mixed-use development. The Project will feature a variety of uses including single-family residential, multi-family housing, commercial, educational, and parks/trails facilities. The proposal features several different types of housing for a total of up to 3,262 residential units at buildout which is broken down as follows: Low Density Residential – maximum of 1,592 units; Medium Density Residential – 758 units; and High Density Residential – 912 units. The number of units is based on the density described in the Specific Plan, but the actual number of units may be less than 3,262.

The proposed Project also includes up to 35.1 acres of commercial development in two locations within the Project (for a total of approximately 205,000 square feet of gross leasable commercial area). The first commercial area consists of up to 28.7 acres of Mixed Use Commercial at the intersection of Riggin Avenue and Shirk Road. Anticipated uses at this location may include development such as a Costco, gas station, car wash, drug store, retail, restaurants (including drive-throughs), and similar uses. The second commercial area consists of up to 6.4 acres of Commercial Neighborhood at the northeast corner of the development. Anticipated uses at this location may include development such as retail, services and restaurants. The commercial facilities are located to provide efficient accessibility to residents of the Project and the surrounding areas.

Other proposed uses include a site for a potential future elementary school, land for a drainage basin, and approximately 17.3 acres of parks/trails/recreational facilities. Various other infrastructure improvements (water, stormwater and wastewater infrastructure, roadway improvements, and related improvements) will be required by the Project. The Project is proposed to be built out in phases with approximately 1,182 residential units and 28.7 acres of Mixed Use Commercial in Phase 1 and approximately 2,080 residential units and 6.4 acres of Commercial Neighborhood in Phase 2.

2.2 Project Location

The proposed Carleton Acres Specific Plan Project (referred to herein as the "Project" or "proposed Project") is located on approximately 507-acres in the northern area of the City of Visalia, California and is generally bound by W. Riggin Avenue to the south, N. Akers Street to the east, N. Shirk Road to the west and Avenue 320 (W. Kibler Avenue) to the north. The site is comprised of two parcels: APN 077-100-088 and APN 077-100-105. APN 077-100-088 consists of approximately 478 acres and is within an unincorporated area of Tulare County while APN 077- 100-105 consists of approximately 29.3 acres and is within the City limits of Visalia. The entire site is within the Urban Growth Boundary (UGB) and Sphere of Influence (SOI) of the City of Visalia and the site has historically been used for agricultural purposes. However, the site has been designated by the City's General Plan for residential, commercial, public/institutional and park/recreation uses.

2.3 Project Objectives

In accordance with CEQA Guidelines Section 15124(b), the following are the City of Visalia's Project objectives:

- To provide a mixed-use development at pricing appropriate for the market, in a growing area of the City of Visalia that satisfies the City of Visalia's policies, regulations and expectations as defined in the City's General Plan, Zoning Ordinance and other applicable plans, documents, and programs adopted by the City.
- To provide a variety of housing opportunities with a range of densities, styles, sizes and values that will be designed to satisfy existing and future demand for quality housing in the area.
- To provide a residential development that assists the City in meeting its General Plan and Housing Element requirements and objectives.
- To provide conveniently-located commercial development to serve north Visalia residents and the Carleton Acres development in a growing area of the City of Visalia.
- To provide a sense of community and walkability within the development through the use of street patterns, parks/open space areas, landscaping and other project amenities.
-

2.4 Actions Covered by the EIR

The City of Visalia will be the Lead Agency for the proposed Project, pursuant to the California Environmental Quality Act (CEQA). The Project will require the following approvals from the City of Visalia:

Specific Plan

- Certification of the Project EIR
- Approval of the Final Specific Plan
- Approval of a Master Tentative Tract Map
- Approval of a Development Agreement

- Approval of a General Plan Amendment
- Approval of Zone Changes

Individual Projects Within the Specific Plan

- Approval of a Lot Line Adjustment to reflect the various stages of the Project (ministerial)
- Approval of Tentative Tract Maps
- Amendments to the Specific Plan, if necessary
- Site Plan Review
- Issuance of Grading / Building Permits (ministerial)
- Public street dedication
- One or more Conditional Use Permits for anticipated uses including, but not limited to a Costco retail store, gas station and car wash

As mandated by CEQA Guidelines Section 15124(d), this section contains a list of agencies that are expected to use the EIR in their decision-making, and a list of the approvals for which the EIR may be used. These lists include information that is known to the Lead Agency. A range of responsible and trustee agencies may utilize the EIR in the review of subsequent implementation activities over which that may have responsibility. A responsible agency is a public agency which has discretionary review approval power over a project (CEQA Guidelines Section 15381). A trustee agency is a state agency that has jurisdiction by law over natural resources affected by a project which are held in trust for the people of the state (CEQA Guidelines Section 15386).

The Project will require various permits and/or entitlements from regulatory agencies. Consultation may be required and the City of Visalia will integrate CEQA review with these related environmental review requirements. These may include, but not be limited to the following:

- Tulare County LAFCO (annexation)
- San Joaquin Valley Air Pollution Control District – approval of construction and/or operational air quality permits
- Regional Water Quality Control Board (Storm Water Pollution Prevention Plan)

3.0 Environmental Review Process Summary; Content of EIR and Record

3.1 Notice of Preparation

The City of Visalia circulated a Notice of Preparation (NOP) of an EIR for the proposed project from May 20, 2021 through June 21, 2021 to trustee and responsible agencies, the State Clearinghouse (SCH #2021050418), and the public. Following publication of the original NOP, changes were made to the proposed Project that consisted of an increase in commercial acreage (from 14.7 acres to 35.1 acres) and a reduction in residential units (from 3,368 units to 3,262 units). Therefore, the Project's NOP was re-circulated from June 2, 2022 through July 5, 2022.

Six agency comments on the NOP related to the EIR analysis were presented or submitted during the public review period (June 2 – July 5, 2022). These comment letters

were identified and incorporated into the Draft EIR. In addition, pursuant to Section 15206 of the State CEQA Guidelines, the lead agency is required to conduct at least one scoping meeting for all projects of statewide, regional, or area-wide significance. The scoping meeting is for jurisdictional agencies and interested persons or groups to provide comments regarding (but not limited to) the range of actions, alternatives, mitigation measures, and environmental effects to be analyzed to be analyzed in the Draft EIR. The City of Visalia hosted a scoping meeting on June 14, 2022, which was during the 30-day public review period of the NOP.

3.2 Draft and Final EIR

Draft EIR

The Draft EIR was properly noticed and circulated for public review and comment for 45 days, from May 4, 2023 through June 19, 2023. The Notice of Availability was published in the *Visalia Times Delta* newspaper. The Draft EIR and Appendices were sent to the State Clearinghouse for distribution and notices were mailed to adjacent landowners, local agencies and other interested individuals.

Final EIR

The City received three comment letters on the Draft EIR. These letters and emails are reproduced in their entirety in Chapter Two of the Final EIR and responses are shown after each letter. The Final EIR allows the public and the City an opportunity to review revisions to the Draft EIR and the responses to comments received during the Draft EIR's public review period. The Final EIR serves as the environmental document to inform the City of the environmental consequences of the proposed Project, either in whole or in part, or one of the alternatives to the Project discussed in the Draft EIR.

As required by Section 15090(a)(1)-(3) of the CEQA Guidelines, a Lead Agency, in certifying a Final EIR, must make the following three determinations:

1. The Final EIR has been completed in compliance with CEQA.
2. The Final EIR was presented to the decision-making body of the Lead Agency, and the decision-making body reviewed and considered the information in the Final EIR prior to approving the project.
3. The Final EIR reflects the Lead Agency's independent judgement and analysis.

As required by Section 15091 of the CEQA Guidelines, a public agency cannot approve or carry out a project for which an EIR has been certified that identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings (Findings of Fact) for each of those significant effects, accompanied by a brief explanation of the rationale to reach findings supported by substantial evidence in the record. The possible findings are as follows:

1. Changes or alterations have been required in or incorporated into the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.
2. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

3. Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

Additionally, pursuant to Section 15093(b) of the CEQA Guidelines, when a Lead Agency approves a project that would result in significant unavoidable impacts that are disclosed in the Final EIR, the agency must state in writing the reasons supporting the approval. The Statement of Overriding Considerations must be supported by substantial evidence in the Lead Agency's administrative record. The Findings of Fact (Section 15091) and Statement of Overriding Considerations (Section 15093(b)) have been provided to the City for consideration.

If the City approves the proposed Project, and as part of that action adopts mitigation measures, the City will also adopt a Mitigation Monitoring and Reporting Program (see Public Resources Code Section 21081.6).

3.3 Content of the EIR

The Carleton Acres Specific Plan "EIR" is comprised of the following materials:

- The Final EIR including any attached appendices;
- The Draft EIR including attached appendices;
- The Notice of Preparation and comments received in response to the Notice of Preparation;
- The Mitigation Monitoring and Reporting Plan ("MMRP");
- Comments received on the Draft EIR with responses to each of the comments made;
- The Notice of Completion and Availability of the Draft EIR for public review; and
- Any other information added by the Lead Agency.

(All hereafter collectively referred to as the "EIR").

Documents that shall accompany and be part of the EIR are:

1. Findings of Fact; and
2. Statement of Overriding Considerations.

The EIR, is hereby incorporated by reference into these findings without limitation. This incorporation is intended to address the scope and nature of mitigation measures, the basis for determining the significance of impacts, the comparative analysis of alternatives, and the reasons for approving the Project despite the potential for associated significant and unavoidable impacts.

3.4 Record of Proceedings

In accordance with CEQA Section 21167.6(e), the record of proceedings for the City's decision on the Project includes, without limitation, the following documents:

- The NOP and all other public notices issued by the City in conjunction with the scoping period for the Project;

- All comments submitted by agencies or members of the public during the scoping comment period on the NOP;
- The Draft EIR for the Project;
- All comments submitted by agencies or members of the public during the comment period on the Draft EIR;
- Responses to agency comments on the Draft EIR (provided in the Final EIR);
- The Final EIR for the Project;
- Documents cited or referenced in the Draft and Final EIRs;
- The Mitigation Monitoring and Reporting Program (MMRP) for the Project;
- The Notice of Completion and Availability of the Draft EIR for public review;
- All findings and resolutions adopted by the City in connection with the Project and all documents cited or referred to therein, including these findings;
- All reports, studies, memoranda, diagrams, staff reports, or other planning documents relating to the Project prepared by the City, consultants to the City, or responsible or trustee agencies with respect to the City's compliance with the requirements of CEQA and with respect to the City's action on the Project;
- All documents submitted to the City by other public agencies or members of the public in connection with the Project up through final consideration of Project approval;
- All minutes and/or verbatim transcripts, as available, of all public meetings held by the
- City in connection with the Project;
- Any documentary or other evidence submitted to the City at such public meetings, and any other information added by the City as Lead Agency;
- Any other materials required to be in the record of proceedings by Public Resources Code Section 21167.6(e).

The official custodian of the documents comprising the record of proceedings is the City of Visalia office, located at 315 E. Acequia Avenue, Visalia, CA 93291. All files have been available to the Department and the public for review in considering these findings and whether to approve the Project.

3.5 Public Hearings

A duly noticed Scoping Meeting was held on June 14, 2022 and public hearings will be held at City Planning Commission and City Council meetings.

4.0 Preliminary Findings

4.1 Lead Agency; Independent Judgment

The City of Visalia is the "Lead Agency" for the proposed Project and evaluated the EIR. The City retained the independent consulting firm of Crawford & Bowen Planning, Inc. to prepare the EIR for the Project. Crawford & Bowen prepared the EIR under the

supervision, direction, and review of the City. The City has received and reviewed the EIR prior to certifying the EIR and prior to making any decision to approve or disapprove the Project. The City finds it has exercised independent judgment in accordance with Public Resources Code Section 21082.1(c)(3) in directing the consultant in the preparation of the EIR, as well as reviewing, analyzing, and revising material prepared by the consultant. The City finds that the EIR was prepared in compliance with CEQA and the CEQA Guidelines. The City finds that it has independently reviewed and analyzed the EIR for the proposed Project, that the Draft EIR was circulated for public review reflected its independent judgment, the Final EIR reflects the independent judgment of the City, and that the EIR reflects the independent judgment of the City.

4.2 Public Review Provided

The City Council finds that the EIR provides objective information to assist the decision-makers and the public at large in their consideration of the environmental consequences of the proposed Project. The public review period provided all interested jurisdictions, agencies, private organizations, and individuals the opportunity to submit comments regarding the Draft EIR. The Final EIR was prepared after the review period and responds to comments made during the public review period.

4.3 Purpose of Errata and Corrections; Clerical Errors

Textual clarifications are sometimes needed to describe refinements suggested as part of the public participation process. The changes and modifications made to an EIR after the Draft EIR was circulated for public review and comment can be made under Public Resources Code section 21092.1 or CEQA Guidelines section 15088.5 in the Final EIR.

4.4 Clerical Errors

The City recognizes that the EIR may contain clerical and/or typographical errors. The City reviewed the entirety of the EIR and bases its determination on the substance of the information it contains.

4.5 Evaluation and Response to Comments

The City evaluated comments on environmental issues received from persons who reviewed the Draft EIR. In accordance with CEQA, the City prepared written responses describing the disposition of significant environmental issues raised. The Final EIR provides an adequate, good-faith and reasoned response to the comments. The City reviewed the comments received and responses thereto and has determined that neither the comments received nor the responses to such comments add significant new information regarding environmental impacts to the Draft EIR. The City has based its actions on full appraisal of all viewpoints, including all comments received up to the date of adoption of these Findings, concerning the environmental impacts identified and analyzed in the EIR.

4.6 Recirculation of Final EIR Not Required

The Final EIR presents the environmental information and analyses that have been prepared for the proposed Project, including comments received addressing the adequacy of the Draft EIR, and responses to those comments. The Final EIR, which includes the responses to comments, the Draft EIR, and the Mitigation, Monitoring, and Reporting Program, will be used by the Visalia Planning Commission and the City Council in the decision-making process for the proposed Project.

This Final EIR is an informational document intended to disclose to the decision makers of the City, and the public, the environmental consequences of approving and implementing the Project or one of the alternatives to the proposed Project, which are described in the Draft EIR. All written comments received during the public review period (May 4, 2023 through June 19, 2023) of the Draft EIR are addressed in the Final EIR

The responses in the Final EIR clarify, correct, and/or amplify text in the Draft EIR. Therefore, no significant revisions have been made which would require recirculation of the Draft EIR pursuant to CEQA Guidelines Section 15088.5 (Recirculation of an EIR Prior to Certification). The Final EIR was prepared in accordance with the California Environmental Quality Act (CEQA) (California Public Resources Code Sections 21000-21177).

4.7 MMRP; Mitigation Measures

CEQA requires the Lead Agency approving a project to adopt a mitigation monitoring and reporting program (MMRP) or the changes to the project which it has adopted or made a condition of project approval to ensure compliance with the mitigation measures during project implementation. The mitigation measures included in the EIR as certified by the City as adopted by the City serves that function. The MMRP includes all of the mitigation measures and Project design features adopted by the City in connection with the approval of the proposed Project and has been designed to ensure compliance with such measures during implementation of the proposed Project. In accordance with CEQA, the MMRP provides the means to ensure that the mitigation measures are fully enforceable.

Unless specifically stated to the contrary in these findings, it is this City Council's intent to adopt all mitigation measures recommended by the EIR that are applicable to the Project. If a measure has, through error, been omitted from the Approvals or from these Findings, and that measure is not specifically reflected in these Findings, that measure shall be deemed to be adopted pursuant to this paragraph. In addition, unless specifically stated to the contrary in these Findings, all Approvals repeating or rewording mitigation measures recommended in the EIR are intended to be substantially similar to the mitigation measures recommended in the EIR and are found to be equally effective in avoiding or lessening the identified environmental impact. In each instance, the Approvals contain the final wording for the mitigation measures.

In accordance with the requirements of Public Resources Section 21081.6, the City hereby adopts the MMRP. The mitigation measures identified for the proposed Project were included in the Draft EIR and Final EIR to mitigate or avoid significant effects on the environment and has been designed to ensure compliance during Project implementation. As revised, the final mitigation measures for the proposed Project are described in the MMRP. Each of the mitigation measures identified in the MMRP is incorporated into the proposed Project and made a condition of approval for permits, required by agreement, or other measures to ensure the MMRP is fully enforceable. The

City finds that the impacts of the proposed Project have been mitigated to the extent feasible by the mitigation measures identified in the MMRP.

4.8 Substantial Evidence

The City finds and declares that substantial evidence for each and every finding made herein is contained in the EIR, which is incorporated herein by this reference, or is in the record of proceedings in the matter.

4.9 Entirety of Action

The City is certifying an EIR for, and is approving and adopting findings for, the entirety of the actions described in these Findings and in the EIR as comprising the proposed Project.

4.10 Effect of Public Comments

The City finds that none of the public comments to the Draft EIR or subsequent public comments or other evidence in the record, including any changes in the proposed Project in response to input from the community, include or constitute substantial evidence that would require recirculation of the EIR prior to certification of the EIR and that there is no substantial evidence elsewhere in the record of proceedings that would require substantial revision of the EIR prior to its certification, and that the EIR need not be recirculated prior to its certification.

4.11 Independent Review of Record

The City Council, after receiving a recommendation from the Planning Commission, certifies that the EIR has been completed in compliance with CEQA. The City Council has independently reviewed the record and the EIR prior to certifying the EIR and approving the Project. By adopting these Findings, the City Council on behalf of the City confirms, ratifies, and adopts the findings and conclusions of the EIR as supplemented and modified by these Findings. The EIR and these Findings represent the independent judgment and analysis of the City and the City Council.

4.12 Adequacy of EIR to Support Approval of the Proposed Project

The City certifies that the EIR is adequate to support all actions in connection with the approval of the proposed Project. The City Council certifies that the EIR is adequate to support approval of the proposed Project described in the EIR, each component and phase of the proposed Project described in the EIR, any variant of the Project described in the EIR, any minor modifications to the proposed Project or variants described in the EIR, as well as all components of the proposed Project.

4.13 Project EIR Findings

In accordance with Public Resources Code section 21081 and CEQA Guidelines sections 15091 and 15092, the City makes the specific findings required by CEQA with respect to each area of potential environmental impact as further set forth in this Section of these

Findings. These Findings do not repeat the full discussions of environmental impacts, mitigation measures, and related explanations contained in the EIR. The City ratifies, adopts, and incorporates, as though fully set forth, the analysis, explanation, findings, responses to comments and conclusions of the EIR. The City adopts the reasoning of the EIR, staff reports, and presentations provided by City staff and the independent consulting firm of Crawford & Bowen Planning, Inc., as may be modified by these Findings.

5. Environmental Impacts and Findings

For Sections 2, 3, 4, and 5 listed above, refer to Attachment "A" of this Resolution No. 2023-48, contained herein by reference.

6. Certification of the Final Environmental Impact Report

6.1 Findings

The City Council finds that it has reviewed and considered the EIR in evaluating the Project, that the EIR is an accurate and objective statement that fully complies with CEQA and the State CEQA Guidelines, and that the EIR reflects the independent judgment of the City Council. The City Council declares that no new significant information as defined by State CEQA Guidelines Section 15088.5 has been received by the City Council after the circulation of the Draft EIR that would require recirculation. All of the information added to the Final EIR merely clarifies, amplifies, or makes insignificant modifications to an already adequate Draft EIR pursuant to State CEQA Guidelines Section 15088.5(b). The City Council hereby certifies the EIR based on the following findings and conclusions.

CEQA Compliance

As the decision-making body for the Project, the City Council has reviewed and considered the information contained in the Findings and supporting documentation. The City Council determines that the Findings contain a complete and accurate reporting of the environmental impacts and mitigation measures associated with the Project, as well as complete and accurate reporting of the unavoidable impacts and benefits of the Project as detailed in the Statement of Overriding Considerations. The City Council finds that the EIR was prepared in compliance with CEQA and that the City Council complied with CEQA's procedural and substantive requirements.

Significant Unavoidable Impacts / Statement of Overriding Considerations

The Project will have significant adverse impacts even following adoption of all feasible mitigation measures which are required by the City Council. As set forth in Section 5.5 of these Findings, the significant environmental impacts have been identified in the Final EIR and no feasible mitigation measures are available to reduce these impacts to a level of insignificance. The City Council has eliminated or substantially reduced environmental impacts where feasible as described in the Findings, and the City Council determines that the remaining unavoidable significant adverse impacts are acceptable due to the reasons set forth in the preceding Statement of Overriding Considerations.

Conclusions

All potentially significant environmental impacts from implementation of the Project have been identified in the EIR and, with the implementation of the mitigation measures defined herein and set forth in the MMRP, will be mitigated to a less than significant level, except for the impacts identified in Section 5.5, above. Other reasonable alternatives to the Project that could feasibly achieve the basic objectives of the Project have been considered and rejected in favor of the Project. Environmental, economic, social, and other considerations and benefits derived from the development of the Project override and make infeasible any alternatives to the Project or further mitigation measures beyond those incorporated into the Project.

7.0 Adoption of Mitigation Monitoring and Reporting Program

Pursuant to Public Resources Code Section 21081.6, the City Council hereby adopts, as conditions of approval of the Project, the MMRP. In the event of any inconsistencies between the mitigation measures as set forth herein and the MMRP, the MMRP shall control except to the extent that a mitigation measure contained herein is inadvertently omitted from the MMRP, in which case such mitigation measure shall be deemed as if it were included in the MMRP.

PASSED AND ADOPTED: October 2, 2023 LESLIE B. CAVIGLIA, CITY CLERK

STATE OF CALIFORNIA)
COUNTY OF TULARE) ss.
CITY OF VISALIA)

I, Leslie B. Caviglia, City Clerk of the City of Visalia, certify the foregoing is the full and true Resolution 2023-48 passed and adopted by the Council of the City of Visalia at a regular meeting held on October 2, 2023.

Dated: October 5, 2023

LESLIE B. CAVIGLIA, CITY CLERK

Michelle Nicholson

By Michelle Nicholson, Chief Deputy City Clerk

5.0 ENVIRONMENTAL IMPACTS AND FINDINGS

5.1 Introduction

City staff reports; the EIR; written and oral testimony at public meetings or hearings; these facts, findings, and statement of overriding considerations; and other information in the administrative record (as further defined above) serve as the basis for the City's environmental determination. Public Resources Code Section 21081 requires that the City Council make one of the following findings for each significant impact:

1. Changes or alterations have been required in, or incorporated into, the project which mitigate or avoid the significant environmental effects identified in the EIR;
2. Those changes or alterations are within the purview and jurisdiction of another public agency, and such changes have been, or can and should be adopted by that other agency; or
3. Specific economic, legal, social, technological, or other considerations make infeasible the mitigation measures or alternatives identified in the EIR.

The same requirements for adopting these findings are also contained in CEQA Guidelines Section 15091(a). Public Resources Code Section 21061.1 defines "feasible" to mean "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, and environmental, social and technological factors." By this document, the City Council makes the findings required by Public Resources Code Section 21081 with regard to the proposed Project.

Additionally, Public Resources Code Section 21002 provides that "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects." It also states, "in the event specific economic, social, or other conditions make infeasible such project alternatives or such mitigation measures, individual projects may be approved in spite of one or more significant effects thereof."

The three available findings under Section 21081 and Guideline Section 15091(a) allow an approving agency to specify, as to particular significant environmental impacts, whether the agency is (a) adopting mitigation measures recommended in an EIR; (b) identifying measures that lay outside its control but should be, or have been, adopted by another agency; or (c) identifying measures that are infeasible. For projects with EIRs that include numerous mitigation measures that are either infeasible or outside the approving agency's control, findings may be very lengthy, as they must explain, for example, why some measures are rejected as being infeasible. In contrast, where the approving agency chooses to adopt each and every mitigation measure recommended in an EIR, there would seem to be little point in repeated invoking, over many dozens of pages, the finding that "[c]hanges or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR." Guideline Section 15091(a).

Where significant impacts are not avoided or significantly lessened, a public agency, after adopting proper findings, may nevertheless approve the project if the agency first adopts a statement of overriding considerations setting forth the specific reasons why the agency found that the project's benefits rendered acceptable its unavoidable adverse environmental effects. CEQA Guidelines §§15093, 15043(b).

The findings below are the City Council's best efforts to set forth the evidentiary and policy bases for its decision to approve the proposed Project in a manner consistent with the requirements of CEQA. These findings are not merely informational but, rather, constitute a

binding set of obligations that come into effect with the City Council's approval of the proposed Project. The City Council adopts these findings for the entirety of the actions described in these findings and in the Final EIR.

Having received, reviewed, and considered the Final EIR and other information in the record of proceedings, based on the substantial evidence the City Council hereby adopts the following findings in compliance with CEQA and the CEQA Guidelines.

1. Findings regarding the environmental review process and the contents of the Final EIR.
2. Findings regarding the environmental impacts of the proposed Project and the mitigation measures (General Plan policies, etc.) for those impacts identified in the Final EIR and incorporated into the Project.
3. Findings regarding alternatives and the reasons that such alternatives are rejected.
4. Statement of Overriding Considerations determining that the benefits of implementing the proposed Project outweigh the significant and unavoidable environmental impacts that will result and therefore justify approval of the proposed Project despite such impacts.
5. Findings regarding the Mitigation Monitoring and Reporting Program.

The City Council of the City of Visalia certifies that these findings are based on its full appraisal and consideration of all viewpoints expressed in written correspondence and testimony regarding the proposed Project, including all comments received up to the date of adoption of these findings, concerning the environmental issues identified and discussed in the Final EIR. The City Council adopts the findings and the statement of overriding considerations for the approvals that are set forth below.

The detailed analysis of potentially significant environmental impacts and proposed mitigation measures for the Project is presented in Chapter 3, Environmental Setting, Impacts and Mitigation of the Draft EIR. Responses to comments on the Draft EIR, along with copies of the comments, are provided in Chapter Two of the Final EIR.

The EIR evaluated 20 major environmental categories for potential impacts as outlined in Appendix G of the *CEQA Guidelines*. Of these 20 major environmental categories, this City Council concurs with the conclusions in the EIR that the issues and sub issues discussed in Subsection 5.2, Subsection 5.3, and Subsection 5.4, below are either no impacts, less than significant without mitigation, or can be mitigated below a level of significance. For the remaining potential environmental impacts that cannot feasibly be mitigated below a level of significance discussed in Subsection 5.5, overriding considerations exist that make these potential impacts acceptable to this City Council.

5.2 No Environmental Impacts

The City Council hereby finds, based upon substantial evidence in the record including the EIR and as discussed below, that the following potential environmental areas result in no impacts by the Project and no mitigation is necessary or required.

Agriculture and Forestry Resources

Impact 3.2-3: The Project would not conflict with existing zoning for, or cause rezoning of, forest land as defined in Public Resources Code section 12220(g), timberland as defined by Public Resources Code section 4526, or timberland zoned Timberland Production (as defined by Government Code section 51104(g)), OR result in the loss of forest land or convert forest land to non-forest use.

Facts and Findings: The Project is not zoned for forestland, timberland, or timberland zoned Timberland Production and does not propose any zone changes related to forest or timberland. No loss of forest land would occur, and no conflicts with forest land zoning would occur. As such, there are no impacts related to this topic.

Biological Resources

Impact 3.4-2: The Project will not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service, or have a substantial adverse effect on federally or state-protected wetlands (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Facts and Findings. The proposed Project site does not support any sensitive natural communities. No riparian habitat, wetlands or other sensitive natural community is present and the site does not overlap critical habitat. Therefore, the Project would have no impacts to sensitive natural communities.

Impact 3.4-4: The proposed Project will not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance OR conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Facts and Findings: No trees or biologically sensitive areas will be impacted and there is no adopted. Habitat Conservation Plan, Natural Communities Conservation Plan or other approved local, regional, or state habitat conservation plan has been adopted in the area. There is no impact.

Geology And Soils

Impact 3.7-5: The Project site does not have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

Facts and Findings: The proposed Project will connect to the City's wastewater/sewer system (Please refer to Section 3.19 – Utilities for the discussion pertaining to Project-related wastewater and connection to the City's sewer system). The Project does not include the construction, replacement, or disturbance of septic tanks or alternative wastewater disposal systems. Therefore, there is no impact.

Hazards and Hazardous Materials

Impact 3.9-5: The Project is not located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and the Project would not result in a safety hazard or excessive noise for people residing or working in the Project area.

Facts and Findings: The nearest public airport is the Visalia Municipal Airport in Visalia, approximately 2.8 miles southwest of the Project site. The nearest private airport is the Swanson Ranch NR 2 Airport, approximately 8.6 miles to the northwest. There are no public or private airport land use plans that are applicable to the Project.

Mineral Resources

Impact 3.12-1: The Project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state OR a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Facts and Findings: There are no known mineral resources within the proposed Project area and as such, no loss of availability to known mineral resources would occur as a result of proposed Project development. There would be no impacts.

Population and Housing

Impact 3.14-2: The Project will no displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. The Project site is currently undeveloped and contains no housing or structures. Thus, the proposed Project would not displace existing housing or people. There is no impact.

5.3 Less Than Significant Environmental Impacts

The City Council hereby finds, based on substantial evidence in the record including the EIR and as noted below, that the following potential environmental impacts of the Project are less than significant and therefore do not require the imposition of mitigation measures.

Aesthetics

Impact 3.1-1: The Project will not have a substantial adverse effect on a scenic vista.

Facts and Findings: There are no established scenic vistas in the area. Thus, the impact is less than significant and no mitigation is required.

Impact 3.1-2: The Project will not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

Facts and Findings: There are no established scenic resources such as rock outcroppings or scenic highways in the Project area. Thus, the impact is less than significant and no mitigation is required.

Impact 3.1-4: The Project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Facts and Findings: An incremental increase in the amount of daytime glare created can be expected, but substantial increases would not be likely. Nighttime lighting would increase with a greater number of lighting sources to the extent that significant impacts from nighttime glare increases would be expected. However, compliance with the City's General Plan Policies as well as applicable ordinances related to lighting and glare will help ensure that impacts remain less than significant and no mitigation is required.

Air Quality

Impact 3.2-4: The Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Fact and Findings: During construction, the various diesel-powered vehicles and equipment in use on-site would create localized odors. These odors would be temporary and would not likely be noticeable for extended periods of time beyond the Project's site boundaries. The potential for diesel odor impacts would therefore be less than significant. As a mixed-use development that includes residential development, the Project has the potential to place sensitive receptors near existing odor sources. As previously mentioned, residences may be located within 50 feet of both the feedlot to the west as well as the dairy to the north of the Project area. For all facilities outlined above, there are existing residential uses located closer to each facility than the proposed Specific Plan. The uses in the Specific Plan area vicinity would not cause substantial odor impacts to future residents occupying development built out under the proposed Specific Plan. The proposed Specific Plan would not place odor-sensitive receptors near an existing or planned source of odor affecting a substantial number of people. Therefore, operational odor impacts in terms of the planning area as an odor-sensitive receptor would be less than significant.

Energy

Impact 3.5-1: The Project will not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation.

Facts and Findings: The Project would result in less than significant impacts, and it would not result in the wasteful, inefficient, or unnecessary use of energy due to Project design features that will comply with the City's design guidelines and regulations that apply to the Project, such as Title 24 Building Energy Efficiency Standards and the California Green Building Standards Code that apply to commercial and residential buildings. The installation of solar panels required by 2022 Title 24 standards is required for most residential development. Furthermore, various federal and state regulations, including the Low Carbon Fuel Standard, Pavley Clean Car Standards, and Low Emission Vehicle Program, would serve to reduce the transportation fuel demand by the Project.

With the adherence to the increasingly stringent building and vehicle efficiency standards as well as implementation of the Project's design features that would reduce energy consumption, the proposed Project would not result in the wasteful or inefficient use of energy. As such, the Project would not result in a significant environmental impact, due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

Impact 3.5-2: The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Facts and Findings: The Project would comply with all applicable goals and measures identified in the City of Visalia Climate Action Plan (CAP). The City of Visalia has adopted local plans that promote renewable energy and energy efficiency, many of which are summarized in the CAP.

The proposed Specific Plan includes residences, commercial development, and schools, and it is designed for ease of travel using alternative transportation methods such as biking or walking, facilitated by the presence of bike lanes and trails throughout the Project area. Thus, it is anticipated that construction of the proposed Specific Plan would not conflict with or obstruct policies of the City of Visalia General Plan and CAP aimed at reducing energy use or increasing the use of renewable energy. Compliance with the mandatory measures of Part 11, Chapter 4 and 5, of the State's Title 24 energy efficiency standards for residential and nonresidential buildings would ensure that the proposed Specific Plan would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing energy use or increasing the use of renewable energy. Therefore, operational energy efficiency and renewable energy standards consistency impacts would be less than significant.

The Project was reviewed for consistency with local and State of California plans that aim to reduce GHG emissions in Chapter 3.8. These plans also serve as the applicable energy plans. Buildings constructed to implement the Project will meet the latest efficiency standards. Vehicles and equipment are expected to become more energy efficient over time, as vehicle and equipment manufactured and/or sold in the regional will continue to be subject to Statewide regulations. The Project is consistent with applicable plans and policies discussed above and would not result in wasteful or inefficient use of nonrenewable energy sources; therefore, impacts would be less than significant.

Geology And Soils

Impact 3.7-1: The Project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

ii. Strong seismic ground shaking?

iii. Seismic-related ground failure, including liquefaction?

iv. Landslides?

Facts and Findings: There are no faults in the Project area, therefore there is limited risk of ground rupture. Projects within the Specific Plan area must be designed in compliance with the Uniform Building Code and California Building Code, and must be inspected by City building inspectors during the construction phase. Also, non-single-family projects must be designed by an engineer or architect to resist any seismic-related impacts, including liquefaction, and must be designed for the appropriate soil type by an engineer to resist spreading, subsidence, or collapse.

The City of Visalia, as well as Project's Specific Plan, requires the applicant to prepare and submit a design-level geotechnical study that complies with all applicable seismic design standards of the California Building Standards Code. The design-level analysis shall address site preparation measures and foundation design requirements of the project. The design-level analysis shall be prepared to the satisfaction of the City of Visalia. Final design-level project plans shall be designed in accordance with the approved geotechnical analysis. There is a negligible risk of liquefaction occurring at the Project site during a design level seismic event. Compliance with all applicable seismic design standards of the California Building Standards Code would ensure that design features would not present a hazard involving landslides.

Impact 3.7-4: The Project is not located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Facts and Findings: With foundation and structural design in accordance with the City of Visalia and current California Building Code standards, impacts from expansive soil on the proposed Project would be less than significant.

Greenhouse Gas Emissions

Impact 3.8-1: The Project would not generate direct or indirect greenhouse emissions that would result in a significant impact on the environment.

Facts and Findings: The proposed Project would achieve reductions beyond the ARB 2020 target, beyond the SJVAPCD requirements, and beyond the reduction identified in the City of Visalia CAP from adopted regulations and on-site design features for Project operation in 2028.

The Project is consistent with the 2017 Scoping Plan and will contribute a reasonable fair share contribution to achieving the 2030 target. The Project would comply with VMT targets adopted to comply with SB 375, would make continued progress towards 2030 GHG reduction goals, and is designed as a mixed-use development, the Project would not conflict with the 2022 Scoping Plan goals. Therefore, the impact would be less than significant.

Impact 3.8-2: The Project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Facts and Findings: The Project would achieve reductions beyond levels identified in the City of Visalia CAP from adopted regulations and on-site design features, and when assessed at Project buildout and when assessed in a 2030 operational year scenario. As such, the Project would be consistent with the City of Visalia CAP. The Project would comply with all applicable rules and regulations, including Building Code standards. The Project design would also support goals and policies called out in the CAP and the City's General Plan to reduce GHG emissions. Therefore, the Project would not conflict with any local plan, policy, or regulation adopted by the City of Visalia to reduce emissions of GHGs.

The Project would not significantly hinder or delay the State's ability to meet the reduction targets contained in AB 32 or SB 32 or conflict with implementation of the Scoping Plan. The Project's post-2020 emissions trajectory is expected to follow a declining trend, consistent with ARB's 2030 and 2050 targets. The proposed Project would include a majority of the feasible operational mitigation measures listed in the 2022 Scoping Plan Appendix D as project design features. Accordingly, taking into account the proposed Project's emissions, project design features, and the progress being made by the State towards reducing emissions in key sectors such as transportation, industry, and electricity, the Project would be consistent with State GHG plans and goals, and does not obstruct their attainment. Impacts are less than significant.

Hazards and Hazardous Materials

Impact 3.9-3: The Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Facts and Findings: Ridgeview Middle School is within 0.25 miles of the proposed Project site. There are no other schools within 0.25 miles, however, a new high school is planned immediately east of Ridgeview Middle School near the center area of the Carleton Acres Project area. In addition, a potential elementary school could also be located within the northern boundaries of the proposed Project. The SJVAPCD's 2015 GAMAQI does not currently recommend analysis of TAC emissions from Project construction activities, but instead focuses on projects with operational emissions that would expose sensitive receptors over a typical lifetime of 70 years. The Project would not exceed SJVAPCD localized emission daily screening levels for any criteria pollutant, and the Project is not a significant source of TAC emissions during construction or operation. Residential and general commercial developments typically do not generate, store, or dispose of significant quantities of hazardous materials. Such uses also do not normally involve dangerous activities that could expose persons onsite or in the surrounding areas to large quantities of hazardous materials. Any impacts would be less than significant.

Impact 3.9-4: The Project would not be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.

Facts and Findings: The proposed Project site is not located on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Geotracker and DTSC

Envirostor databases). The EnviroStor Database identified Ridgeview Middle School, adjacent site to the southeast, as a Certified Closed School Cleanup Site. The site was certified closed on 04/04/2018 with no further actions required for the school cleanup. Ridgeview Middle School was constructed at the site in 2016. Based on the cleanup and status of the site, it is considered a low risk to the Project site. There are no hazardous materials sites that impact schools within ¼ mile of the Project site and the Project would not create a significant hazard to the public or the environment. There are no hazardous materials sites that impact the Project. Therefore, the impact is less than significant and no mitigation is required.

Impact 3.9-6: The Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Facts and Findings: The Tulare County Emergency Operations Plan (EOP) includes planning and response scenarios for emergency situations associated with natural and anthropogenic disasters. The Fire Department also houses the City's Emergency Operations Center and lead emergency preparedness and planning for the City. In addition, the City Fire Department has specific procedures for hazardous materials emergency response. The proposed Project would also comply with the appropriate local and State requirements regarding emergency response plans and access. The Project would not inhibit the ability of local roadways to continue to accommodate emergency response and evacuation activities and as such, the Project would not interfere with the City's adopted emergency response plan. Therefore, the Project will have a less than significant impact and no mitigation is required.

Impact 3.9-7: The Project would not expose people or structures either directly or indirectly to a significant risk of loss, injury or death involving wildland fires.

Facts and Findings: Wildfire hazard data for the City of Visalia is provided by the California Department of Forestry and Fire Protection. The majority of the City is considered to have either little or no threat, with very small portions having a moderate threat of wildfire. According to the City of Visalia 2030 General Plan Hazards and Safety Services Figure 8-4, neither the proposed Project nor its vicinity have a high wildfire threat. In addition, and as described in the Environmental Setting section, only a very small portion of land within Tulare County is designated as a Very High Fire Hazard Severity Zone by the Local Responsibilities Area mapping program. There are no other factors of the proposed Project or the surrounding area that would exacerbate wildfire or the uncontrolled spread of a wildfire. For these reasons, the impact is considered less than significant.

Hydrology and Water Quality

Impact 3.10-2: The Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin (Less than significant at project level only, cumulative impact is significant and unavoidable. See Section 5.5).

Facts and Findings: The proposed Project would add demand for potable water to the Visalia District of the California Water Service Company (Cal Water) water system, which is reliant on groundwater to serve its customers. The residential and commercial developments of the Project combined are expected to demand less water than the demand estimated by the Visalia UWMP. Because the service area water demand forecasted by the Visalia District UWMP is higher than the estimated water demand with the proposed Project, it can be assumed that available water supplies will be able to meet the projected demand resulting from the Project. Therefore, the Project will not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin. The impact is determined to be less than significant.

The less than significant determination is for project level only, the cumulative impact is significant and unavoidable. See Section 5.5.

Impact 3.10-4: The Project would not result in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

Facts and Findings: The majority of the Project is designated Flood Insurance Rate Map Zone "X" (outside the 500-year flood zone) while small portions of the site along the northern and northwestern boundary are in Flood Zone "AE" which includes areas subject to risk from a 100-year flood. Urban development is allowed under both flood zones. The site has been designed with adequate storm drain capacity, and compliance with the requirements for SWPPP and BMPs will ensure that risk of release of pollutants due to project inundation is less than significant. The site is also located more than 75 miles from the nearest ocean that could cause a tsunami and there are no bodies of water near the Project site that would represent any impacts related to seiche zones. Therefore, the impact is less than significant and no mitigation is required.

Impact 3.10-5: After mitigation, the Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Facts and Findings: The City of Visalia (through Cal Water) is part of the Mid-Kaweah Groundwater Sustainability Agency (MKGSA). The proposed Project, if approved, would come under the jurisdiction and purview of Cal Water which is subject to MKGSA's Groundwater Sustainability Plan (GSP). The GSP was submitted to the Department of Water Resources on January 31, 2020. Projects and management actions described in the Mid-Kaweah GSA GSP include: groundwater recharge projects and programs, surface reservoir projects, leveraged surface water exchange programs, a groundwater extraction measurement implementation program, a conceptual groundwater marketing program, and future urban and agricultural conservation. The Mid- Kaweah GSA GSP states that the GSA will work during the period from 2020 to 2025 to develop a pumping allocation program to achieve, along with neighboring GSAs, the Kaweah Subbasin's sustainable yield by 2040. The Mid-Kaweah GSA plans to prioritize the projects/programs above to serve as the first means to achieve sustainability, but by 2026, it is anticipated that an allocation plan would be ready for implementation if necessary to achieve sustainability. Upon approval, the Project will be subject to the rules and requirements of MKGSA's GSP. Therefore, the Project will not conflict with or obstruct a sustainable groundwater management plan.

Land Use and Planning

Impact 3.11-1: The Project would not physically divide and established community.

Facts and Findings: The proposed Project site has historically been used for agricultural purposes and there are no residences or businesses on the site. Areas to the west and east are planned for urban development and there are scattered rural residences and agricultural facilities to the north. There are no established communities that would be divided by the Project. The City of Visalia General Plan and Zoning Ordinance establish land use policies and regulations that are applicable to the proposed Project. Upon annexation, the Project will be subject to the land use plans, policies and regulations of these documents. Because the Project would not physically divide an established community, the impact is determined to be less than significant.

Impact 3.11-2: The Project would not ause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Facts and Findings: The site comprises two parcels: APN 077-100-088 and APN 077-100-105. APN 077-100-088 consists of approximately 478 acres and is within an unincorporated area of Tulare County while APN 077- 100-105 consists of approximately 29.3 acres and is within the City limits of Visalia. The entire site is within the Urban Growth Boundary (UGB) and Sphere of Influence (SOI) of the City of Visalia and the site has historically been used for agricultural purposes. However, the site has been designated by the City's General Plan for residential, commercial, public/institutional and park/recreation uses. The proposed Project is an appropriate use for the site and, once annexed into the City, the Project will be consistent with the applicable objectives, goals and policies outlined in the City of Visalia General Plan. Implementation of these policies and measures will ensure that impacts remain less than significant.

Noise

Impact 3.13-2: The Project would not lead to generation of excessive groundborne vibration or groundborne noise levels.

Facts and Findings: The dominant sources of man-made vibration are sonic booms, blasting, pile driving, pavement breaking, demolition, diesel locomotives, and rail-car coupling. None of these sources are anticipated from the Project site. It is unlikely that vibration from construction activities could be detected at the closest sensitive land uses. After full Project build out, it is not expected that ongoing operational activities will result in any vibration impacts at nearby sensitive uses. Any impacts would be less than significant and no mitigation is required.

Impact 3.13-3: The Project is not located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and the Project would not expose people residing or working in the project area to excessive noise levels.

Facts and Findings: The Project is not located within two miles of a public airport or private airstrip. The Project site is not within any airport land use plans and the Project would not expose people residing or working in the Project area to excessive airport-related noise levels. Therefore, there is a less than significant impact and no mitigation is required.

Population and Housing

Impact 3.14-1: The Project would not induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

Facts and Findings: Project implementation will have a direct, growth inducing impact on the area's population and housing stock. The Project is proposed to be built out in two phases as identified in Table 2-1 (in Chapter Two – Project Description). Although the exact timing of construction and buildout will be determined by market conditions, the Project Applicant and the City, it is anticipated that the Project would be built out over an approximately 15-year period with approximately 100 low-density residential units per year on average with the remaining buildout to be determined by demand.

For purposes of evaluating the environmental impact of population growth in Visalia under CEQA, the question becomes whether or not the Project will induce population beyond what the City has or will plan for and/or can accommodate at full buildout of the Project. The assessment takes into account Project-related impacts to topics like traffic, water supply, public services (police, fire, etc.), sewer / storm drain capacity, and other related topics, as the City has prepared infrastructure Master Plans based on buildout of the City's General Plan. As shown in Section 3.12 (Population and Housing) of the Draft EIR, the anticipated population and housing

unit increase associated with the proposed Project is within the growth projections of the City's 2030 General Plan and the City's Housing Element.

While other future residential developments are also likely to occur in the City, it is anticipated that the City can accommodate the Project and other residential developments in the City. The General Plan anticipated a population of up to 210,000 people with up to 69,079 residential units by 2030. Given the City's current population (142,978 persons) and housing stock (49,513 units), the City could accommodate the proposed Project plus an additional 57,105 persons and 16,304 housing units according to the City's General Plan.

Based on the City's General Plan, infrastructure master planning documents, and the City's Housing Element, it is determined that the proposed Project will not induce unplanned population growth beyond that which can be accommodated by the City. It has been determined that the City has adequate capacity to serve the Project and therefore, the Project will have a less than significant impact occurring from inducement of unplanned population.

Public Services

Impact 3.15-1: The Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection, police protection, schools, parks, or other public facilities.

Facts and Findings: Upon approval and annexation into the City, the City would provide public services to the Project. Potential impacts to public services are discussed individually by topic below.

Fire Protection

Fire protection services would be required to serve the proposed Project. As previously described, the City of Visalia provides firefighting response services through the VFD. In order to maintain existing levels of fire protection, the VFD will need to increase its resources to serve the Project. Based on the City's ratio of 0.48 responders per 1,000 residents, the proposed Project would require an additional 4.7 firefighters at full Project buildout. Based on the City's 2021 population, the City is below the target of one firefighter per 1,000 residents. Thus, the Project will require additional staffing to accommodate the Project. The proposed Project will be required to pay fire service impact fees from new development based on projected impacts from the development. This fee will be determined by the City prior to issuance of building permits. The proposed Project does not trigger the need for a new fire station or expansion of existing facilities at this time.

Police Protection

Police protection services would be required to serve the proposed Project. As previously described, the VPD provides police services for the City. Based on the City's ratio of 1.7 officers per 1,000 residents, the proposed Project would require an additional 16.6 officers at full buildout. the proposed Project will be required to pay police service impact fees from new development based on projected impacts from the development. This fee will be determined by the City prior to issuance of building permits. The proposed Project does not trigger the need for a new police station or expansion of existing facilities at this time.

Schools

The proposed Project includes development of residential housing, which will lead to an increase in the number of students enrolled within the VUSD. The City is currently planning a new high school that will be constructed adjacent to and west of the existing Ridgeview Middle School and would be surrounded by the proposed Project to the north, west and south. Funding for schools and school facilities impacts is outlined in Education Code Section 17620 and Government Code Section 65995 et. seq., which governs the amount of fees that can be levied

against new development. These fees are used to construct new or expanded school facilities. Payment of fees authorized by the statute is deemed "full and complete mitigation."

The proposed Project will be required to pay impact fees from new development based on the Developer Fee rates that are in place at the time payment is due. The Project will be required to pay its the school impact fee as a condition of approval. The impact fee amount will be the amount established by the School District and the State Allocation Board in place at the time of submittal of building permit applications. Thus, with payment of impact fees, the impact to schools and school facilities is less than significant.

Parks

In the Project area, the City of Visalia currently owns approximately 20 acres of land at the northwest corner of Akers Street and Riggin Avenue (adjacent to the Project). The 20 acres is planned for future parks/recreational use. As previously indicated in Section 3.14 – Population and Housing, the proposed Project is within the population growth assumptions of the City's General Plan. Thus, the Project will not result in growth that would require additional park land beyond what was identified in the City's General Plan.

The Project includes development of approximately 17.3 acres of parks/recreational facilities within the Project site. The Project will also be subject to payment of impact fees to support buildout of park land as identified in the City's General Plan. The impact fee amount will be the amount established in the City's adopted impact fee program in place at the time of submittal of building permit applications. Thus, with payment of impact fees, the impact to parks is less than significant.

Other Public Facilities

Development of the Project will increase the demand for other public services such as libraries, governmental services, emergency services and health services. However, the increase in demand will not in and of itself require construction of additional facilities. The anticipated population and housing unit increase associated with the proposed Project is within the growth projections of the City's General Plan. Based on the City's General Plan and infrastructure master planning documents, it is determined that the proposed Project will not induce unplanned population growth beyond that which can be accommodated by these other public services.

Therefore, with payment of impact fees, the proposed Project will have a less than significant impact on public services.

Recreation

Impact 3.16-1: the Project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated OR include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Facts and Findings: As discussed herein, the total park and recreational space requirements at full build out of the Project would total at least 49.6 acres for approximately 9,917 residents. This ratio satisfies the City's requirement of 5.0 acres per 1,000 residents. The required parks / recreational acreage would be met through a combination of construction of 17.3 acres of parks / recreational facilities (including trails) and payment of park impact fees to the City of Visalia. The impact fees would support future recreational facilities throughout the City that are consistent with the City's planned recreational projects and therefore would not result in environmental impacts from construction. These future planned projects will assist the City in meeting its requirement of 5.0 acres of park/recreational space per 1,000 residents. Therefore, with payment of impact fees and construction of 17.3 acres park/recreational facilities on site,

the Project will provide sufficient park and recreational facilities per the City's requirements and will not significantly increase the demand on existing parks and recreation facilities.

Transportation

Impact 3.17-2: The Project would not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

Facts and Findings: An analysis of project VMT (vehicle miles traveled) was conducted in accordance with the *City of Visalia VMT Thresholds and Implementation Guidelines*, adopted March 15, 2021 (VMT Guidelines). Since the Project's VMT per service population is less than the significance threshold, the Project is not expected to result in a significant transportation impact under CEQA, therefore no mitigation is required. Based on the City's guidelines and thresholds, the Project would have a less than significant impact.

Impact 3.17-3: The Project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Facts and Findings: The site has been designed with 13 points of ingress and egress. All proposed internal roadways will be constructed to meet local and State standards and requirements. No sharp roadway curves currently exist in the proposed Project area, nor would such curves be created by the proposed Project. No roadway design features associated with this proposed Project would result in an increase in hazards due to a design feature or be an incompatible use. The internal road system has been designed with traffic calming features such as curved roadways, mini-circles at some intersections and relatively short blocks of housing. There are no agricultural uses (such as farm equipment) associated with the Project. Any impacts would be less than significant.

Utilities and Service Systems

Impact 3.19-1: The Project will not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

Facts and Findings: The Project will require that utilities be extended to serve the proposed development, including water, wastewater, stormwater, electric power, natural gas and telecommunications facilities.

Wastewater/Sewer

As discussed herein, once annexed into the City, the Project site would be located within the service area of the City of Visalia WCF. Compliance with conditions or permit requirements established by the City as well as water discharge requirements outlined by the RWQCB would ensure that wastewater discharges coming from the proposed Project site and treated by the WCF system would not exceed applicable Central RWQCB wastewater treatment requirements. The Project is within the population growth projections (and associated wastewater capacity availability) identified in the City's existing infrastructure planning documents and is subject to payment of impact fees. No new off-site sewer infrastructure construction is required, as the Project will tie into existing sewer infrastructure and no expansion of the existing WWTP is necessary to accommodate the Project. The impact is determined to be less than significant.

Stormwater

The proposed Project would result in new impervious areas associated with site improvements and would therefore require new storm water drainage facilities. The proposed Project would install storm water drainage facilities, including a stormwater drainage basin, that would be in

compliance with the City of Visalia Development Standards. No new off-site stormwater infrastructure construction is required.

Water Supply

The Project will add demand for water to the City of Visalia (Cal Water) water system. The Project is expected to demand less water than the demand estimated by the Visalia UWMP. Based on the Project's SB 610 Water Supply Assessment (Appendix H), the City has sufficient water to serve the Project. However, the Project is subject to water use reduction methods and will be subject to water service impact fees. No new off-site water supply infrastructure construction is required, as the Project will tie into existing water supply infrastructure.

Electricity and Natural Gas

The Project will require connection to existing public electrical utilities and to Southern California Gas Company natural gas facilities. No new or additional off-site electrical or natural gas infrastructure construction is anticipated to be required.

Solid Waste

Since the proposed Project would be within the growth projections assumed by the City's MSR, General Plan and other infrastructure planning documents, and because the Tulare County Solid Waste Division has indicated it has existing and future capacity, the Project would not result in a significant impact. The proposed Project would be required to comply with applicable State and local regulations. No new off-site solid waste infrastructure construction is required. Therefore, a less than significant impact would occur.

Telecommunications

The proposed Project is within the service area of communication network providers and it is expected that they can serve the proposed Project. No new off-site telecommunications infrastructure construction is required.

Impact 3.19-2: The Project will have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years (Less than significant at project level only, cumulative impact is significant and unavoidable. See Section 5.5).

Facts and Findings: The proposed Project would add demand for potable water to the Visalia District of the California Water Service Company (Cal Water) water system, which is reliant on groundwater to serve its customers. The Project is expected to demand less water than the demand estimated by the Visalia UWMP. Because the service area water demand forecasted by the Visalia District UWMP is higher than the estimated water demand with the proposed Project, it can be assumed that available water supplies will be able to meet the projected demand resulting from the proposed Project. This included an evaluation of normal, dry and multiple dry year scenarios. The Project will be required to pay water impact fees. The impact is determined to be less than significant and no mitigation is required. The less than significant determination is for project level only, the cumulative impact is significant and unavoidable. See Section 5.5.

Impact 3.19-3: The Project will not result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Facts and Findings: Based on the WCP's existing capacity, the WCP can adequately serve the proposed Project in addition to other growth/development in the City. In addition, the proposed Project's anticipated number of additional residents is within the expected range of growth that was planned for and can be accommodated by the City. The City's infrastructure planning documents (such as the Sewer Master Plan) rely, in part, on the growth projections

contained in the City's General Plan. Based on this information, it is reasonable to assume that the Project is within the population growth projections (and associated wastewater capacity availability) identified in the City's infrastructure planning documents. Although the City's WCF has adequate capacity to serve the Project, the Project would be required to pay wastewater (sewer) impact fees prior to the issuance of a building permit, thereby offsetting the costs associated with acceptance of the Project wastewater. Thus, the impact is less than significant and no mitigation measures are required.

Impact 3.19-4: The Project will not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

Facts and Findings: Solid waste collection service is provided by the City, while disposal services are provided through Tulare County via area landfills. The Tulare County Solid Waste Division indicated that the Visalia Landfill has sufficient capacity to accommodate solid waste disposal demands through year 204016. Since the proposed Project would be within the growth projections assumed by the City's MSR, General Plan and other infrastructure planning documents, and because the Tulare County Solid Waste Division has indicated it has existing and future capacity, the Project would not result in a significant impact. In addition, the proposed Project would be required to comply with applicable State and local regulations, including regulations pertaining to disposal of recyclable materials. With adequate landfill capacity at existing landfills and compliance with regulations, a less than significant impact would occur.

Impact 3.19-5: The Project will comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Facts and Findings: The proposed Project would be required to comply with all federal, State, and local statutes and regulations related to the handling and disposal of solid waste and impacts would be less than significant.

Wildfire

Impact 3.20-1: The Project would not substantially impair an adopted emergency response plan or emergency evacuation plan, OR expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire, require the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary of ongoing impacts to the environment, or expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes, as the Project is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones.

Facts and Findings: The proposed Project area is relatively flat, and there are no forested areas, extensive grasslands, or heavily wooded areas on or near the Project site. No roadway design features associated with the proposed Project would result in an impairment of an adopted emergency response or evacuation plan. The City has reviewed the site layout and determined that the Project provides adequate emergency access. Impacts associated with Project development would be less than significant related to wildfires given the distance the proposed Project from the State Responsibility Area and the State's Very High Fire Hazards Severity Zone and the intervening land uses between them. The proposed Project would require the installation or maintenance of additional distribution lines to connect the residences to the existing utility grid; however, the Project would be constructed in accordance with all local and State regulations regarding power lines and other related infrastructure, as well as fire suppression requirements.

5.4 Less Than Significant Environmental Impacts With Mitigation

Public Resources Code Section 21081 states that no public agency shall approve or carry out a project for which an EIR has been completed that identifies one or more significant effects unless the public agency makes one or more of the following findings:

- Changes or alternations have been required in, or incorporated into, the Project that mitigate or avoid the significant effects on the environment.
- Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.
- Specific economic, legal, social, technological, or other considerations make infeasible the mitigation measures or alternatives identified in the EIR, and overriding economic, legal, social, technological, or other benefits of the Project outweigh the significant effects on the environment.

The following issues from the environmental categories analyzed in the EIR were found to be potentially significant, but can be mitigated to a less than significant level with the imposition of mitigation measures. This City Council hereby finds, based on substantial evidence in the record including the EIR and as noted below, pursuant to Public Resources Code Section 21081 that all potentially significant impacts listed below can and will be mitigated to below a level of significance by imposition of the mitigation measures in the EIR; and that these mitigation measures are included as Conditions of Approval and set forth in the MMRP adopted by this City Council. Specific findings of this City Council for each category of such impacts are set forth in detail, below.

Agriculture and Forestry Resources

Impact 3.2-2: After mitigation, the Project will not conflict with existing zoning for agricultural use, or a Williamson Act contract.

Finding: Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

Mitigation Measure: AG-2.

Facts in Support of the Finding: The Project site is not subject to a Williamson Act contract, pursuant to Government Code Section 51200 et seq. Therefore, there would be no conflict with a Williamson Act Contract and as such, no impacts to this subject area.

Total Project acreage is 507 acres, of which approximately 29.3 acres are already within the City limits of Visalia (zoned R-M-3) and no land use changes are proposed for the 29.3 acres. The remaining 478 acres are within an unincorporated area of Tulare County, with the zoning as AE-40 (Exclusive Agriculture-40 acres minimum) and are proposed for annexation into the City. Once annexed, the zoning designations for 478 acres will be changed from agriculture to urban uses as described in Section 2.2 – Project Description. The new zoning would accommodate the proposed Project and as such, there would be no impact resulting from a zoning conflict. However, in order to ensure that existing agricultural operations in the area can be maintained, a Right-to-Farm Covenant will be required as identified in Mitigation Measure AG – 2. After mitigation, the impact is determined to be less than significant.

Impact 3.2-4: After mitigation, the Project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.

Finding: Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

Mitigation Measure: AG-2

Facts in support of the Finding: The proposed Project site is located in an area that is surrounded by farmland / agricultural operations to the north, a proposed/future industrial complex to the west, existing residential to the south, and residential/agricultural land to the east. Total Project acreage is 507 acres, of which approximately 29.3 acres are already within the City limits of Visalia (zoned R-M-3) and no land use changes are proposed for the 29.3 acres. The remaining 478 acres are currently within an unincorporated area of Tulare County, with the zoning as AE-40 (Exclusive Agriculture-40 acres minimum) and are proposed for annexation into the City and zoning changed to urban uses. According to the LESA prepared for the Project, the site is substantially surrounded by Prime Farmland to the north (existing agriculture), east (already planned for future urban development) and west (already planned for future urban development). However, the requested General Plan Amendment and annexation is site specific and does not apply to any properties other than the proposed Project site. Therefore, it is unlikely that the Project would result in the conversion of other farmland or forest land. With the implementation of mitigation measure AG-2 as identified in Impact 3.2-2, the impact is less than significant and no mitigation is required.

Biological Resources

Impact 3.4-1: After mitigation, the Project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service.

Finding: Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

Mitigation Measure: BIO-1, BIO-2, BIO-3, and BIO-4

Facts in support of the Finding: According to the Biological Resource Evaluation report, one special-status plant species and two special-status animal species could occur on or near the Project site.

One record of Sanford's Arrowhead from 2018 is known from approximately 7 miles northeast of the Project site. Although this species was not detected during the reconnaissance survey, which was conducted within the blooming period, aquatic habitat on and near the Project site could support this species. However, the frequent disturbance to these water conveyance features through vegetation clearing minimizes the potential of this species to occupy these habitats. Implementation of BIO-1 will ensure any impacts to Sanford's arrowhead are less than significant.

There are two records of burrowing owl from within 5 miles of the Project site. Several California ground squirrel burrows that could support this species were found on the periphery of the Project site and within the fallow fields on the Project site. These fallowed fields could provide foraging habitat and thus support burrowing owl. However, the habitat is routinely disked, which minimizes the potential of this area to support this species. Mitigation measure BIO-2 shall be implemented to reduce potential impacts to less than significant.

There are three records of Swainson's hawk from within 5 miles of the Project site. The fallow fields of the Project site provide potential foraging habitat for Swainson's hawk, and several potential nest trees were observed within 0.5 mile of the Project site. Therefore, the potential for this species to occur is moderate. Mitigation measures BIO-3 and BIO-4 shall be required to reduce impacts to Swainson's hawk.

Significant impacts to special status species could occur; however, implementation of mitigation measures BIO-1 through BIO-4 would provide specific avoidance and protection measures that will help ensure that potential impacts are less than significant.

Impact 3.4-3: After mitigation, the Project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery site.

Finding: Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

Mitigation Measure: BIO-5

Facts in support of the Finding: The proposed Project could impede the use of nursery sites for native birds protected under the MBTA and CFGC. Migratory birds are expected to nest on and near the Project site. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Construction activities such as excavating, trenching, and grading that disturb a nesting bird on the Project site or immediately adjacent to the construction zone could constitute a significant impact. Mitigation Measure BIO-5 shall be required to reduce potential impacts to a less than significant level.

Cultural Resources

Impact 3.5-1: After mitigation, the Project would not cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5 OR cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.

Finding: Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

Mitigation Measure: CUL-1

Facts in support of the Finding: According to the records search and site survey, there are no recorded cultural resources within the Project area. Project construction and operation would occur on existing disturbed lands (most recently in agricultural use); however, further disturbance associated with the Project could potentially discover buried sensitive historical, archaeological or cultural resources. This would be a potentially significant impact. However, mitigation measure CUL – 1 included herein will reduce the impact to a less than significant level.

Impact 3.5-2: After mitigation, the Project would not disturb any human remains, including those interred outside of formal cemeteries.

Finding: Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

Mitigation Measure: CUL-2

Facts in support of the Finding: California Health and Safety Code Section 7050.5, CEQA Section 15064.5, and Public Resources Code Section 5097.98 mandate the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery. Although soil-disturbing activities associated with development in accordance with the proposed project could result in the discovery of human remains, compliance with existing law would ensure that impacts to human remains would not be significant. Project development would occur on existing disturbed lands; however, further disturbance could potentially uncover human remains. This would be a potentially significant

impact. However, mitigation measure CUL-2 included herein will reduce the impact to a less than significant level.

Geology and Soils

Impact 3.7-2: After mitigation, the Project would not result in substantial soil erosion or the loss of topsoil.

Finding: Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

Mitigation Measure: GEO-1

Facts in support of the Finding: Construction activities associated with the Project involves ground preparation work for the proposed development of the site. These activities could expose barren soils to sources of wind or water, resulting in the potential for erosion and sedimentation on and off the Project site. The Applicant and/or contractor would be required to employ appropriate sediment and erosion control Best Management Practices (BMPs) as part of a Stormwater Pollution Prevention Plan (SWPPP) that would be required and submitted to the Central Valley Regional Water Quality Control Board (Central Valley RWQCB) in accordance with the National Pollution Discharge Elimination System (NPDES). In addition, soil erosion and loss of topsoil would be minimized through implementation of the San Joaquin Valley Air Pollution Control District (SJVAPCD) fugitive dust control measures (See Section 3.3 – Air Quality). Once construction is complete, the Project would not result in significant soil erosion or loss of topsoil. Mitigation Measure GEO – 1 (requirement to prepare a SWPPP) will ensure that impacts remain less than significant.

Impact 3.7-3: The Project is not located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

Finding: Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

Mitigation Measure: GEO-2

Facts in support of the Finding: The proposed Project is located on relatively flat agricultural fields, and the threat of a landslide occurring on or adjacent to the project site is considered low. The proposed Project would be located on soils that exhibit low to moderate potential for liquefaction during an earthquake, and the potential for lateral spreading to occur is considered low. A design-level geotechnical analysis will be required as identified in Mitigation Measure GEO – 2. The site would be designed in accordance with engineering design standards and structural improvement requirements to withstand the effects of soil settlement and collapsible soils. Engineered compacted fill would likely be used during construction in accordance with building code requirements, which would reduce the potential for lateral spreading of soils from Project construction. Therefore, with implementation of Mitigation Measure GEO – 2, and structural/foundation design in accordance with the City of Visalia and current California Building Code standards, ground shaking impacts on the proposed Project area would be less than significant.

Impact 3.7-6: After mitigation, the Project would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

Finding: Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

Mitigation Measure: CUL-1

Facts in support of the Finding: There are currently no unique geologic features located in the Project Area. While the discovery of paleontological resources within the Project footprint is considered unlikely, Project buildout would adhere to California Public Resources Code Section 21083.2 which requires all earth-disturbing work to be temporarily suspended or redirected until a qualified paleontologist has evaluated the nature and significance of the records, in accordance with federal, State, and local guidelines. In addition, Mitigation Measure CUL-1 would be implemented in the case of any inadvertent discoveries. With adherence to these regulatory requirements and measures, impacts would be less than significant with mitigation.

Hazards and Hazardous Materials

Impact 3.9-1: After mitigation, the Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Finding: Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

Mitigation Measure: GEO-1

Facts in support of the Finding: Project construction activities may involve the use and transport of hazardous materials used during construction. Transportation, storage, use, and disposal of hazardous materials during construction activities would be required to comply with applicable federal, State, and local statutes and regulations. Compliance would ensure that human health and the environment are not exposed to hazardous materials. In addition, the Project would be required to comply with Mitigation Measure GEO-1 which ensures the Project adhere to the National Pollutant Discharge Elimination System (NPDES) permit program through the submission and implementation of a Stormwater Pollution Prevention Plan during construction activities to prevent contaminated runoff from leaving the Project site. Therefore, after mitigation, no significant impacts would occur during construction activities.

The operational phase of the proposed Project would occur after construction is completed and residents and employees move in to occupy the structures on a day-to-day basis. The proposed Project includes land uses that are considered compatible with the surrounding uses, including single and multi-family residential uses, commercial uses, open space, parks / recreation areas and a stormwater basin. Compliance with all federal, State and local regulations, and the City of Visalia General Plan Implementing Policies S-P-3, S-P-15 through S-P-19, S-P-21, S-P-27 through S-P-30, S-P-32, S-P-37, and S-P-38 in the Safety and Noise Element would ensure that the Project would not cause an adverse effect on the environment with respect to the use, storage, or disposal of general household and commercial hazardous substances generated from future development or uses. In addition, Mitigation Measure GEO – 1 (requirement for SWPPP and erosion BMPs) will ensure impacts remain less than significant.

Impact 3.9-2: After mitigation, the Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Finding: Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

Mitigation Measure: HAZ-1, HAZ-2, and HAZ-3

Facts in support of the Finding: A Phase I Environmental Site Assessment was prepared for the Project (See Appendix G). No CREC, HREC, or BER were identified on the Project site. Based on the results of the Phase I, the Project will require subsurface investigation to evaluate the potential for elevated residual concentrations of agricultural chemicals that could potentially be present on site. Mitigation Measure HAZ – 1 will be implemented to reduce the impact to a less than significant level.

Although the Phase I did not identify any previous oil / gas wells on or adjacent to the site, the California Department of Conservation – Geologic Energy Management Division (Division) provided an NOP comment letter that indicated there is one (1) well on the Project site that has been abandoned to current Division requirements as prescribed by law. However, the Division recommends that the Project provide a delineation of the well location and to provide notice to present and future property owners that an abandoned well may be on site. This is identified in Mitigation Measure HAZ – 2. In addition, Mitigation Measure HAZ – 3 has been included in the event that any unknown wells are uncovered or damaged during excavation or grading activities. Because the existing well has been abandoned pursuant to the Division's requirements and because additional investigation will occur prior to issuance of grading permits (with any remedial action required),after implementation of Mitigation Measures HAZ-1, HAZ-2, and HAZ – 3, the Project's impacts would be reduced to a less than significant level.

Hydrology and Water Quality

Impact 3.10-1: After mitigation, the Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

Finding: Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

Mitigation Measures: GEO – 2.

Facts in support of the Finding: The Project has the potential to impact water quality standards and/or waste discharge requirements during construction (temporary impacts) and operation (polluted stormwater runoff due to an increase in impervious surfaces and urban runoff).

The Project site is located within the Central Valley RWQCB and is subject to the applicable requirements of the Basin Plan administered by the RWQCB in accordance with the Porter-Cologne Water Quality Control Act. In accordance with the NPDES Stormwater Program, and as described in Section 3.6 - Geology and Soils, Mitigation Measure GEO – 2 ensures the Project will comply with existing regulatory requirements to prepare a SWPPP designed to control erosion and the loss of topsoil to the extent practicable using BMPs that the RWQCB has deemed effective in controlling erosion, sedimentation, runoff during construction activities. The specific controls are subject to the review and approval by the RWQCB and are an existing regulatory requirement. Implementation of Mitigation Measure GEO - 2 would ensure that the proposed Project would have a less than significant impact.

Compliance with conditions or permit requirements established by the City as well as water discharge requirements outlined by the RWQCB would ensure that wastewater discharges coming from the proposed Project site and treated by the WWTP system would not exceed applicable Central RWQCB wastewater treatment requirements. The Project will not result in a violation of any water quality standards or waste discharge requirements. Therefore, with mitigation, impacts result in a less than significant impact.

Impact 3.10-3: After mitigation, the Project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. result in substantial erosion or siltation on- or offsite;

ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

iv. impede or redirect flood flows?

Finding: Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

Mitigation Measures: GEO – 2.

Facts in support of the Finding: Construction and long-term operations of the proposed Project could result in potential impacts to surface water quality from urban stormwater runoff. The proposed Project would result in new impervious areas associated with site improvements, including new asphalt, concrete and the proposed structures on site. In accordance with the NPDES Stormwater Program, and as described in the Section 3.6 - Geology and Soils, the Project will be required to comply with existing regulatory requirements to prepare a SWPPP designed to control erosion and the loss of topsoil to the extent practicable using BMPs that the RWQCB has deemed effective in controlling erosion, sedimentation, runoff during construction activities. The specific controls are subject to the review and approval by the RWQCB and are an existing regulatory requirement. Construction of the storm drain basin and implementation of Mitigation Measure GEO - 2 would ensure that the proposed Project would have a less than significant impact relative to this topic.

Noise

Impact 3.13-1: After mitigation, the Project will not result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Finding: Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

Mitigation Measures: NOI-1, NOI-2, NOI-3, and NOI-4.

Facts in support of the Finding:

Noise Impacts to Off-Site Sensitive Receptors

The Project's contribution to 2042 traffic noise exposure levels at the modeled representative receptor locations would not result in noise levels to exceed the City's noise level standard, nor result in an increase of 3 dB in any sensitive receptor locations where noise levels already exceed the City's noise level standard without the implementation of the Project. The Project contribution to future noise levels (at full buildout) would be less than considerable and the Project would have a less than significant impact.

Off-Site Noise Impacts From Operational On-Site Sources

The proposed Project includes up to 35.1 acres of commercial development in two locations within the Project.

Mixed Use Commercial (Impacts to Off-Site Receptors)

The Project would include up to 28.7 acres of Mixed-Use Commercial near the southwest corner of the Project site. Anticipated developments within the Mixed-Use Commercial Zone include a Costco retail center, gas station, car wash, drug store, retail and restaurants (including quick serve/drive-through uses). The closest existing sensitive receptors (residential land uses) to the proposed Mixed-Use Commercial Zone are single-family residential uses located to the south, along W. Riggin Avenue. The single-family uses along W. Riggin have an existing 6-foot sound wall along the roadway frontage. The sound wall would provide a minimum of 5 dB of noise level reduction from ground level noise sources occurring within the Project site. As identified in

the *Acoustical Analysis*, an analysis was conducted for typical stationary noise sources associated with such land uses and each were determined to have a less than significant impact.

Neighborhood Commercial Zone (Impacts to Off-Site Receptors)

The Project would include up to 6.4 acres of Commercial Neighborhood at the northeast corner of the development. Anticipated uses at this location may include development such as retail, services and restaurants. The closest existing residential land use to the Neighborhood Commercial Zone is located approximately 1,500 to the east. When specific uses within the study area are proposed that could result in a noise-related conflict between a commercial or other stationary noise source and existing or proposed noise-sensitive receptor, an acoustical analysis may be required that quantifies project-related noise levels and recommends appropriate mitigation measures to achieve compliance with the City's noise standards. This will be implemented as Mitigation Measure NOI – 1.

Off-Site Noise Impacts From Construction

Construction noise would occur at various locations within and near the Project site through the buildout period. Existing sensitive receptors could be located as close as 100 feet from construction activities. Construction noise is not considered to be a significant impact if construction is limited to the allowed hours and construction equipment is adequately maintained and muffled. Extraordinary noise-producing activities (e.g., pile driving) are not anticipated. A noise impact could occur if construction activities do not incorporate appropriate best management practices (BMP) in regards to construction-related noise. The Project will be required to comply with the City of Visalia's Municipal Code regarding construction noise. Therefore, impacts from construction noise are considered less than significant.

Noise Impacts to On-Site Sensitive Receptors

The proposed Project includes sensitive receptors (residential land uses) that could be impacted by traffic noise exposure adjacent to arterial roadways. Standard wall heights permitted by the City of Visalia range between 6-foot to 7-foot in height. Depending on the height and geometric relationship between the roadway and the receiver location, wall of this height range would be typically expected to provide between approximately 5-6 dB of noise attenuation. While specific wall height requirements would generally be determined once final lot layout designs and elevations are known, wall heights of up to 7 feet will be sufficient to mitigate traffic noise within all proposed residential land uses, to below the City's acceptable maximum allowed noise exposure levels. This will be implemented as Mitigation Measure NOI – 2.

Noise Impacts from Operational On-Site Resources:

- Mixed Use Commercial (Impacts to On-Site Receptors):

The first commercial area consists of up to 28.7 acres of Mixed- Use Commercial at the intersection of Riggin Avenue and Shirk Road. Anticipated uses at this location may include development such as a Costco, gas station, car wash, drug store, retail, restaurants (including drive-throughs), and similar uses. The Project would include medium-density residential land uses proposed adjacent to the Mixed- Use Commercial Zone.

In addition to the other noise producing components, the proposed Costco retail center would include a car wash facility. To achieve an output which is below the City's threshold and would thus result in a less than significant impact, Mitigation Measure NOI – 3 will be a condition of Project approval.

- Neighborhood Commercial Zone (Impacts to On-Site Receptors):

The Project would include high-density residential land uses proposed adjacent to the Neighborhood Commercial Zone. When specific uses within the study area are proposed (and their locations are defined) that could result in a noise-related conflict between a commercial or other stationary noise source and Project proposed sensitive receptors, an acoustical analysis

may be required that quantifies Project- related noise levels and recommends appropriate mitigation measures to achieve compliance with the City's noise standards. This will be implemented as Mitigation Measure NOI – 1. Refer to the mitigation measures at the end of this section.

- Noise Impacts from Proposed School Land Uses:

Sources of operational noise associated with school land uses could include mechanical equipment (trash compactors, HVAC, etc.), vehicle and bus movements and noise associated with general school activities (children at play). There is one existing school site (Ridgeview Middle School) as well as two proposed school sites within the overall Project site footprint. The locations of school parking lots and bus access and loading areas in relation to proposed residential land uses were not known at the time of this publication. If bus movements (occurring off public roadways, but on school campus) were to occur within ninety (90) feet of outdoor activity areas of residential land uses (outdoor common use areas and individual patios and balconies for multi-family homes and backyards of single-family homes), associated noise levels could exceed the City's stationary noise level standards at residential land uses. Therefore, Mitigation Measure NOI – 4 will be implemented to reduce this impact to a less than significant level.

As described herein, the Project could, without mitigation, result in the generation of a substantial temporary (during construction) or permanent (operational) increase in ambient noise levels in the vicinity of the Project, or exceed standards established in the local general plan or noise ordinance, or applicable standards of other agencies. However, with implementation of mitigation measures NOI – 1 through NOI – 4, impacts are reduced to a less than significant.

Transportation

Impact 3.17-4: After mitigation, the Project would not result in inadequate emergency access.

Finding: Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

Mitigation Measures: TRA-3.

Facts in support of the Finding: Project construction activities could result in potential vehicular access issues due to potential temporary road detours and/or closures to accommodate Project construction. A construction-traffic management plan (Plan) will be required prior to construction of the proposed Project, as identified in Mitigation Measure TRA – 3. The Plan would delineate all road closure provisions to maintain access to adjacent properties at all times, prior notices, adequate sign-postings, detours, provisions for pedestrian and bicycle transportation and permitted hours of construction activity. Once constructed, the proposed Project includes multiple access roads allowing adequate egress and ingress to the residential and commercial developments in the event of an emergency. Additionally, as part of the proposed Project, internal access roadways would be constructed to City standards. The City has reviewed the site layout and determined that the Project provides adequate emergency access. Therefore, there is a less than significant impact.

Tribal Cultural Resources

Impact 3.18-1: After mitigation, the Project would not cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Finding: Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

Mitigation Measures: TRI-1, TRI-2, TRI-3, and TRI-4.

Facts in support of the Finding: The City of Visalia requested a Sacred Lands File (SLF) search from the Native American Heritage Commission (NAHC), which was received on August 5, 2021. The search was negative for sacred sites and tribal cultural resources. According to SB 18, the tribes had 90 days from the receipt of the letter to request consultation with the City of Visalia. Of the tribes that were notified in August 2021, the City received one response from the Santa Rosa Indian Community of the Santa Rosa Rancheria, who requested that a Tribal representative be present for all ground disturbance related to the Project. As such, mitigation measure TRI – 1 has been included to accommodate this request.

Although construction and operation would occur on previously disturbed land, unknown historical resources may be discovered during ground-disturbing activities. In order to account for unanticipated discoveries and the potential to impact previously undocumented or unknown resources, the following mitigation measures are recommended. With the implementation of Mitigation Measures TRI-1 through TRI-4, impacts under this criterion would be less than significant with mitigation.

5.5 Environmental Impacts Not Fully Mitigated to a Less Than Significant Level

The City Council finds, based on substantial evidence in the record including the EIR and as noted below, the following environmental impacts identified in the EIR remain significant even after application of all feasible mitigation measures, as set forth below. The City also finds that any alternative discussed in the EIR that may reduce the significance of these impacts is rejected as infeasible for the reasons given in the EIR and this Section of these Findings. In accordance with CEQA Guidelines Section 1092(b)(2), the City Council of the City of Visalia cannot approve the Project unless if first finds (1) under Public Resources Code Section 21081(a)(3), and CEQA Guidelines Section 15091(a)(3), that specific economic, legal, social, technological, or other considerations, including provisions of employment opportunities make infeasible the mitigation measures or project alternatives identified in the EIR; and (2) under CEQA Guidelines Section 15092(b), that the remaining significant affects are acceptable due to overriding concerns described in the CEQA Guidelines Section 15093 and, therefore, a statement of overriding considerations is included herein. Each potential unavoidable significant impact is overridden as set forth below in the Statement of Overriding Considerations as described further in Section 5.8, and the City finds that specific overriding economic, legal, social, technological, or other benefits of the Project outweigh the significant effects on the environment.

Aesthetics

Impact 3.1-3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Finding: There are no mitigation measures available that would reduce the loss of public views of the site and surroundings, thus the impact is significant and unavoidable.

Mitigation Measures: None.

Facts in Support of the Findings: The proposed Project is located in an area of Visalia that is planned for, and is undergoing urban development. The area to the west is planned for commercial/industrial development, areas to the east are planned for residential development and to the south is existing residential development. Areas to the north primarily consist of agriculture/dairy and scattered rural residences. In addition, the site is planned for urban development under the City's General Plan.

Implementation of the proposed Project will alter the visual character of the Project site from historically agricultural uses to urban development. This includes residential housing (up to two stories in height) and commercial components including uses such as a Costco, retail, restaurants and other similar uses. New development would incrementally reduce views to open agricultural land now available to some residents and travelers on adjacent roadways. Development of the proposed Project in compliance with the policies of the City of Visalia General Plan, the City Design Guidelines and development standards referenced above in the Regulatory Setting will ensure integration of new homes and non-residential structures in an aesthetically pleasing manner within the proposed development. However, because the Project would permanently alter the existing visual character of the site and area compared to existing conditions, this is considered a significant, unavoidable and irreversible impact.

All feasible mitigation measures have been included in the Project's Draft EIR and will also be enforced as conditions of approval through the provisions of CEQA. However, the impact remains significant and unavoidable.

Agriculture and Forestry Resources

Impact 3.2-1: The Project would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

Finding: There are no mitigation measures available that would reduce the impact resulting from loss of farmland on the Project site, thus the impact is significant and unavoidable.

Mitigation Measures: AG-1.

Facts in Support of the Findings: According to the FMMP, the 507-acre proposed Project site is classified as Prime Farmland. The site is comprised of two parcels: APN 077-100-105 consists of approximately 29.3 acres and is within the City limits of Visalia, with the zoning as R-M-3 (Multi-Family Residential). APN 077-100-088 consists of approximately 478 acres and is within an unincorporated area of Tulare County, with the zoning as AE-40 (Exclusive Agriculture-40 acres minimum). However, both parcels are within the Urban Growth Boundary (UGB) and Sphere of Influence (SOI) of the City of Visalia. The Project site has been designated by the City's General Plan for residential, commercial, public/institutional and park/recreation uses and is located in both Tier 2 and Tier 3 of the City's future growth threshold boundaries.

The City has evaluated the Project's farmland conversion impacts utilizing the California Agricultural Land Evaluation and Site Assessment Model (LESA), which the California Department of Conservation developed to provide lead agencies with a methodology to ensure that significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process. (See Public Resources Code §21095). According to the LESA Threshold of Significance, the total score of 89.17 for the proposed Project site is considered significant. As such, the Project is subject to the City's General Plan Land Use Policy LU-P-34 which requires mitigation for the loss of farmland.

The Project consists of 507 acres, of which approximately 29.3 acres are already within the City limits of Visalia (zoned R-M-3) and, being within Tier I, are not subject to the City's agricultural mitigation policy. The 29.3 acres of prime farmland was previously evaluated under the City's General Plan EIR, adopted in October 2014 (State Clearinghouse #2010041078). The remaining 478 acres are within an unincorporated area of Tulare County, are currently zoned AE-40 (Exclusive Agriculture-40 acres minimum), are within Tiers II and III, and are proposed for annexation into the City. As such, the 478 acres proposed for annexation are subject to the City's agricultural mitigation policy (See MM AG – 1).

The General Plan identifies the need for the conversion of agricultural land to urban development. The City has set aside three-tiered areas planned for development which contain land designated as Prime Farmland and Farmland of Statewide Importance. The Project is within Tier 2 and Tier 3, which has been deemed as land to be converted from agricultural land to urban development.

The 2014 General Plan Policy LU-P-34 contained a requirement for an Agricultural Mitigation Program to address the conversion of Prime Farmland and Farmland of Statewide Importance within the Tier 2 and Tier 3 growth boundaries. As this is a requirement for consistency with the General Plan, the Project's compliance is mandatory. Therefore, compliance with General Plan Policy LU-P-34 will allow the Project to convert Prime Farmland and Farmland of Statewide Importance and preserve offsite farmland outside of the urban development boundaries at an equivalent ratio.

Although the Project will comply with the City's agricultural mitigation policy based on City General Plan Policy LU-P-34 (Mitigation Measure AG – 1), conversion of agricultural land to urban use is not directly mitigable, aside from preventing development altogether. There is no additional feasible mitigation measure that would reduce the impacts related to the Prime Farmland converted as a result of development of the proposed Project. Therefore, even with mitigation, impacts as a result of farmland conversion are considered significant and unavoidable.

Air Quality

Impact 3.3-1: The Project would conflict with or obstruct implementation of the applicable air quality plan.

Finding: Implementation of Mitigation Measure AIR-2A and AIR-2B will reduce impacts; however, impacts remain significant and unavoidable.

Mitigation Measures: AIR-2A and AIR-2B.

Facts in Support of the Findings: the Project's emissions are significant for ROG, NOX, CO, and PM10 and would be considered inconsistent with the AQP for this criterion. The Project complies with applicable control measures of the AQP and would be less than significant for this criterion. The growth accommodated by the proposed Carleton Acres Specific Plan is included in the City of Visalia's General Plan; therefore, it is consistent with the land use assumptions used to prepare the AQP. The Carleton Acres Specific Plan includes numerous design features to reduce motor vehicle trips and increase walking, bicycling, and transit use.

In addition, development contemplated under the Specific Plan would be subject to SJVAPCD Rule 9510, which is intended to mitigate the cumulative impacts of new development in the San Joaquin Valley to the extent feasible. However, after compliance with Rule 9510, total emissions will still exceed the SJVAPCD quantitative thresholds of significance for several pollutants. Incorporation of mitigation that would reduce the proposed Project's regional criteria and ozone precursor emissions is identified under Impact 3.3-2. Because the combined emissions from operations of development under the proposed Specific Plan would continue to exceed at least one regional threshold after compliance with SJVAPCD Rule 9510 and incorporation of mitigation, the impact would be significant. Implementation of Mitigation Measure AIR-2A and

AIR-2B will reduce impacts; however, even after mitigation, impacts remain significant and unavoidable.

Impact 3.3-2: The Project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

Finding: Implementation of Mitigation Measure AIR-2A and AIR-2B will reduce impacts; however, impacts remain significant and unavoidable.

Mitigation Measures: AIR-2A and AIR-2B.

Facts in Support of the Findings: Air pollutant emissions have both regional and localized effects. The proposed Specific Plan development would be consistent with several measures identified in the General Plan EIR, while one measure would not be applicable . In addition, the Project would comply with all local regulations required by the City of Visalia. The Project would incorporate design features and required mitigation measures (including MM AIR- 2A and MM AIR-B) that reduce air quality impacts. In addition, regulations adopted by the SJVAPCD and the State of California provide emission reductions that would align with requirements of the mitigation measures included in the EIR and relevant General Plan policies.

Individual development projects will be subject to the most recent Title 24 in effect that building permits are issued, which will ensure that building energy consumption would not be wasteful or inefficient. Buildout of the proposed Specific Plan would provide future residents, visitors, and employees connectivity within the Project site and to adjoining land uses through pedestrian and bicycle connections. The proximity of the proposed new development to existing transit and existing buildout in the City of Visalia, coupled with the design features of the proposed Specific Plan, would increase accessibility to public transportation and would improve mobility within the Project area.

Overall, the proposed Specific Plan would create a considerable amount of internal capture between its components to reduce VMT compared to the same level of development built with land uses geographically separated from each other; however, as described above, Project emissions will exceed significance thresholds for both construction and operations. After incorporation of MM AIR-2A, regional construction emissions generated by the proposed Project would have a less-than-significant impact. However, non-permitted emissions generated during Project operations would exceed the applicable regional thresholds for ROG, NOX, CO, and PM10 even after incorporation mitigation. Therefore, even after mitigation, the impacts are significant and unavoidable.

Impact 3.3-3: The Project would potentially expose sensitive receptors to substantial pollutant concentrations.

Finding: Implementation of Mitigation Measure AIR-2A and AIR-2B will reduce impacts; however, impacts remain significant and unavoidable.

Mitigation Measures: AIR-2A, AIR-2B, and AIR-3A.

Facts in Support of the Findings: The proposed Specific Plan contemplates the development of residential uses, commercial uses, and public facilities within the Specific Plan area to complement and support a developing area of the City of Visalia. The calculated health metrics from the proposed Project's operational emissions would not exceed the cancer risk significance threshold, the non-cancer hazard index significance threshold, or the acute non-cancer hazard in any scenario analyzed. Therefore, the proposed Project would not result in a significant impact on nearby sensitive receptors (including future residents within the Specific Plan area) from Project-generated TACs from gasoline fueling activities and operational DPM from the proposed Costco gasoline station and warehouse. Mitigation Measure AIR-3A has thus been fully implemented for the Costco development.

Mitigation Measure AIR-3A, which requires further evaluation of proposed commercial and commercial mixed-use development within the Specific Plan area, would require individual projects to reduce impacts to an acceptable level. Although individual development projects would be required to implement all feasible and enforceable mitigation to reduce a significant impact, information is insufficient to determine whether impacts would be less-than-significant after incorporation of all applicable mitigation. Therefore, this impact remains significant.

The Project would not exceed SJVAPCD localized emission daily screening levels for any criteria pollutant during Project construction. The localized emissions of PM10, PM2.5, and NOX would not exceed the screening thresholds during Project operations. Furthermore, the Project would not have a significant impact in regard to ROG during Project operations. The Project would not be a suitable habitat for Valley fever spores and is not in area known to have naturally occurring asbestos. However, the Project may expose sensitive receptors to substantial concentrations of TACs from construction and/or operations of the Project and may expose sensitive receptors to significant levels of CO during Project operations. Therefore, the Project could result in significant impacts to sensitive receptors. As the exact timing, details surrounding potential sources, and exact locations and occupancy of planned residential receptors is unknown at this time, the impact is considered significant. Mitigation measures are included to reduce the severity of potential impacts; however, impacts are still significant and unavoidable.

Hydrology and Water Quality

Impact 3.10-2: The Project could substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin (Less than significant at project level only, cumulative impact is significant and unavoidable).

Finding: There are no feasible mitigation measures to reduce the cumulative impact to a less than significant level.

Facts in Support of the Findings: The City of Visalia (through Cal Water) is part of the Mid-Kaweah Groundwater Sustainability Agency (MKGSA). The proposed Project, if approved, would become under the jurisdiction and purview of Cal Water which is subject to MKGSA's Groundwater Sustainability Plan. The City of Visalia utilizes groundwater as its sole source of potable water. As identified herein and in the SB 610 Water Supply Assessment, the City anticipates being able to provide adequate potable water to the City through the year 2042. However, development of the Project in combination with future projects within the Basin would increase the amount of overdraft in the Basin, which is already in a state of overdraft. Therefore, even with compliance with the GSP and implementation of water-reduction measures required by Cal Water, the Project would result in cumulatively considerable and unavoidable significant impacts to groundwater supplies in the Basin.

Transportation/Traffic

Impact 3.17-1: The Project would conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

Finding: Implementation of Mitigation Measure TRA-1 and TRA-2 will reduce impacts; however, impacts remain significant and unavoidable.

Mitigation Measures: TRA-1 and TRA-2.

Facts in Support of the Findings: The proposed Project includes the construction and operation of a 507-acre mixed-use Project, which could result in potentially significant increases in traffic in and around the Project area. As the City's currently adopted General Plan Circulation Element includes a LOS standard, to ensure that a Project is consistent with the General Plan policy, an LOS analysis may be required at the request of the City Traffic Engineer to determine necessary roadway infrastructure improvements and capacity.

All study intersections are expected to operate with minimal delay (at or above LOS D) during peak hours through the year 2046, both with and without Project traffic, or can be mitigated to operate at an acceptable LOS, expect for the following intersections:

- Rd 67/Betty Dr (#31)
- Dinuba Blvd/Riggin Ave (#45)
- Akers St/Ferguson Ave (#48)
- Demaree St/Goshen Ave (#54)
- Demaree St/Mineral King Ave (#60)

Therefore, even with implementation of all feasible mitigation measures, the Project will result in significant and unavoidable impacts.

Utilities and Service Systems

Impact 3.19-2: The Project will have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years at the project level, but cumulative impacts are determined to be significant and unavoidable.

Finding: There are no feasible mitigation measures to reduce the cumulative impact to a less than significant level.

Facts in Support of the Findings: The City of Visalia (through Cal Water) is part of the Mid-Kaweah Groundwater Sustainability Agency (MKGSA). The proposed Project, if approved, would become under the jurisdiction and purview of Cal Water which is subject to MKGSA's Groundwater Sustainability Plan. The City of Visalia utilizes groundwater as its sole source of potable water. As identified herein and in the SB 610 Water Supply Assessment, the City anticipates being able to provide adequate potable water to the City through the year 2042. However, development of the Project in combination with future projects within the Basin would increase the amount of overdraft in the Basin, which is already in a state of overdraft. Therefore, even with compliance with the GSP and implementation of water-reduction measures required by Cal Water, the Project would result in cumulatively considerable and unavoidable significant impacts to groundwater supplies in the Basin.

5.6 Alternatives

CEQA Guidelines Section 15126.6 requires the consideration of a range of reasonable alternatives to the proposed Project that could feasibly attain most of the objectives of the proposed Project. The alternatives analyzed for the Project are as follows:

1. No Project
2. Alternate Location
3. Reduced (50%) Project

These alternatives are described in more detail below.

1. No Project Alternative

CEQA Section 15126.6(e) requires the discussion of the No Project Alternative "to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project". The No Project scenario in this case consists of retaining the property in its original configuration, with no construction or operation of the proposed

Carleton Acres Specific Plan Project. Under this alternative, the site remains in agricultural production and no new urban development would occur on the site.

Description

This alternative would avoid both the adverse and beneficial effects of the Project. This alternative would avoid ground disturbance and construction-related impacts associated with construction of the proposed Project. No new development would occur on the site. The No Project Alternative would avoid the generation of any environmental impacts beyond existing conditions.

Environmental Considerations

Continuation of the site as an agricultural facility would result in all environmental impacts being less than the proposed Project, as no new impacts would occur. There would be no changes to any of the existing conditions and there would be no impact to each of the 20 CEQA Checklist evaluation topics. The No-Project Alternative by definition would not meet the objectives of the proposed Project.

2. Alternate Location Alternative

Description

There are relatively few sites within the City of Visalia that provide adequately sized lands suitable for the proposed Project. The criteria for selection included whether or not the alternate site would substantially reduce environmental impacts, availability of land, adequately sized parcels, efficiency of access, and acceptable land use designations/zoning. There are areas of agricultural land of similar size located both south and west of the proposed Project. These areas could conceivably support the proposed Project and are depicted in the Figures A-1, A-2, and A-3 of the Draft EIR. The areas are partially outside the City limits but have similar zoning and land use designations as the proposed Project site. In addition, these areas would allow for contiguous growth adjacent to existing urban development in the City. Perhaps the greatest obstacle in selecting an alternative site for the proposed Project is that the Project Applicant does not already own land at these locations and/or does not have control of land at these locations. However, for purposes of environmental evaluation, a description of potential environmental impacts is provided below.

Environmental Considerations

Development of an alternate site could theoretically meet most of the Project objectives presented earlier in this chapter. However, construction and operation at an alternate site would result in environmental impacts that are likely equal to or in some cases could be greater than the proposed project. The majority, if not all, of project impacts are likely to occur at an alternate site.

3. Reduced Project (50%) Alternative

This alternative would reduce the Project components by 50% as follows:

- Reduction in acreage from 507 to 253.5
- Reduction in residential units from 3,262 to 1,631
- Reduction in commercial acreage from 35.1 to 17.5
- Reduction in parks/recreational acreage from 17.3 to 8.7
- Corresponding reductions in infrastructure, etc.

The Project would remain a mixed-use development with a variety of housing types, with the 50% reduction.

Environmental Considerations

Most of the environmental issues associated with this alternative would be less or similar to those of the proposed Project. The Reduced (50%) Alternative would meet some of the Project Objectives. However, this Alternative would not be fully consistent with the objective to provide residential development that assists the City in meetings its Housing Element requirements (the City currently has a deficit in meeting its Regional Housing Needs Allocation goals). A 50% reduction in units would result in a larger Regional Housing Needs Allocation deficit than the proposed Project.

Environmentally Superior Alternative

As presented in the comparative analysis above, there are a number of factors in selecting the environmentally superior alternative. An EIR must identify the environmentally superior alternative to the project. The No Project Alternative would be environmentally superior to the Project on the basis of its minimization or avoidance of physical environmental impacts. However, CEQA Guidelines Section 15126.6(e)(2) states:

The "no project" analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

Because the No Project Alternative cannot be the Environmentally Superior Alternative under CEQA, the Reduced (50%) Project Alternative would be the Environmentally Superior alternative because it would result in less adverse physical impacts to the environment with regard to air, water, noise, public services, population/housing, utilities and traffic. However, the Reduced (50%) Project Alternative does not eliminate the proposed Project's significant and unavoidable impacts associated with Agriculture - Loss of Farmland (project and cumulative); Air Quality (project and cumulative); Hydrology – Water Supply (cumulative only); Transportation - Conflict with Plan/Program (project and cumulative); and Utilities & Service Systems – Water Supply (cumulative only). Furthermore, the Reduced (50%) Project Altenative does not meet all of the Project objectives, particularly with regard to quantity and diversity of housing.

Summary and Determination

Only the No Project and Reduced (50%) Project Alternatives could potentially result in fewer impacts than the proposed Project's impacts. These Alternatives however, would not fully meet the objectives of the proposed Project. After this full, substantial, and deliberate analysis, the proposed Project remains the preferred alternative.

5.7 Growth Inducing Impacts

Section 15126.2(d) of the CEQA Guidelines requires than at EIR evaluate the growth-inducing impacts of a proposed action. A growth-inducing impacts is defined by the CEQA Guidelines as:

The way in which a proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth… it is not assumed that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment.

Based on the State CEQA Guidelines, growth inducement is any growth that exceeds planned growth of an area and results in new development that would not have taken place without

implementation of the Project. A project can have direct and/or indirect growth inducement potential. Direct growth inducement would result if a project, for example, involved construction of new housing. A project would have indirect growth inducement potential if it established substantial new permanent employment opportunities or if it would involve a construction effort with substantial short-term employment opportunities that would indirectly stimulate the need for additional housing and services to support the new employment demand. Similarly, a project would indirectly induce growth if it would remove an obstacle to additional growth and development, such as removing a constraint on a required public service. A project providing an increased water supply in an area where water service historically limited growth could be considered growth-inducing.

The State Guidelines further explain that the environmental effects of induced growth are considered indirect impacts of the proposed action. These indirect impacts or secondary effects of growth include increased demand on other community and public services and infrastructure, increased traffic and noise, and adverse environmental impacts such as degradation of air and water quality, degradation or loss of plant and animal habitat, and conversion of agricultural and open space land to developed uses.

Growth inducement may constitute an adverse impact if the growth is not consistent with or accommodated by the land use plans and growth management plans and policies for the area affected. Local land use plans provide for land use development patterns and growth policies that allow for the orderly expansion of urban development supported by adequate urban public services, such as water supply, roadway infrastructure, sewer service, and solid waste service.

The proposed Project involves the establishment of a mixed-use development that is being proposed in response to the demand for housing and commercial facilities in the area. The Project is consistent with the City of Visalia's General Plan and Zoning Ordinance and will connect to all existing City utility services. The anticipated population and housing unit increase associated with the proposed Project are within the growth projections of the City's General Plan. The proposed Project would create a relatively minor amount of new employment opportunities during construction and for the proposed commercial facilities associated with the Project. As of February 2023, Tulare County (Visalia-Porterville Metropolitan Statistical Area) had an unemployment rate of 10.6 percent1 and it is anticipated that those new employment opportunities associated with the Project could likely be filled by the existing employment base. There are no other indirect aspects of the Project (such as creation of oversized public utility lines, etc.) that would induce further growth in the area. The proposed Project would not result in significant growth-inducing impacts.

5.8 Irreversible Environmental Changes

Section 15126(c) of the CEQA Guidelines requires that an EIR include a discussion of significant irreversible environmental changes that would result from project implementation. CEQA Section 15126.2(d) identifies irreversible environmental changes as those involving a large commitment of nonrenewable resources or irreversible damage resulting from environmental accidents.

Irreversible changes associated with the project include the use of nonrenewable resources during construction, including concrete, plastic, and petroleum products and renewable resources such as timber. To the extent nonrenewable uses are used during construction, the Project is being created to meet existing demand for housing and services in the City, which would lead to the consumption of these resources elsewhere if the Project were not built. Therefore, the Project would not result in a new impact to nonrenewable resources. During the operational phase of the proposed Project, energy would be used for lighting, heating, cooling, and other requirements and petroleum products would be used by vehicles associated with the residents of the proposed development and the commercial facilities. The use of these resources would not be substantial, would not be inefficiently used, and would not constitute a

significant effect. Refer to Draft EIR Section 3.6 – Energy for more information pertaining to the proposed Project's energy use.

In the future, the site could be rezoned or redeveloped for a different use also allowed in the existing General Plan or Zoning Ordinance designations, in which case, at the end of the useful life of the Project, the use could change. Therefore, the Project would not commit future generations to a significant change in land use. This is in contrast to a large industrial use, where reuse for non-industrial uses likely would require extensive remediation, making such reuse difficult, or large infrastructure projects that are rarely moved or dismantled once constructed.

The proposed Project would not result in irreversible damage resulting from environmental accidents. The Project consists of a mixed-use residential and commercial development. None of these land uses routinely transport, use, or dispose of hazardous materials, or present a reasonably foreseeable release of hazardous materials, with the exception of common residential and commercial hazardous materials such as cleaners, paint, petroleum products, etc. Handling and use of hazardous materials and the disposal of the resulting hazardous wastes would be required to follow the applicable laws and regulations, as described in Section 3.9-1 – Hazards & Hazardous Materials herein. As such, irreversible environmental accidents are unlikely.

5.9 Statement of Overriding Considerations

Public Resources Code Section 21081 mandates that no public agency shall approve or carry out a project for which an environmental impact report has been certified that identifies one or more significant effects on the environment that would occur if the Project is approved or carried out unless the following occur:

- The public agency makes one or more of the following findings with respect to each significant impact:
    - Changes or alternatives have been required in, or incorporated into, the Project that mitigate or avoid the significant impacts on the environment.
    - Those changes or alternatives are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.
    - Specific economic, legal, social, technological, or other considerations make infeasible the mitigation measures or alternatives identified in the EIR.
    - With respect to the third point, the public agency finds that specific overriding economic, legal, social and technological, or other benefits of the Project outweigh the significant impact on the environment.

As discussed in Subsection 5.4, significant impacts were identified, but mitigation measures have been incorporated into the Project that mitigate or avoid the significant impacts on the environment. Additionally, as discussed in Subsection 5.5, there were significant and unavoidable impacts that could not be mitigated to a less than significant level.

Accordingly, the Visalia City Council adopts this Statement of Overriding Considerations with respect to the significant unavoidable impacts associated with adoption of the Project as addressed in the EIR, specifically for the following impact areas:

- **Aesthetics** – Degrade existing visual character (project and cumulative level)
- **Agriculture & Forestry Resources** - Loss of farmland (project and cumulative level)
- **Air Quality** – Conflict with Air Quality Plan / Exceed criteria pollutant thresholds (project and cumulative level)

- **Hydrology & Water Quality** – Water supply (cumulative level only)
- **Transportation** – Conflict with Plan/Program (project and cumulative level)
- **Utilities & Service Systems** – Water supply (cumulative level only)

The City Council hereby declares that, pursuant to State CEQA Guidelines Section 15093, the City Council has balanced the benefits of the Project against any significant and unavoidable environmental impacts in determining whether to approve the Project. If the benefits of the Project outweigh the unavoidable adverse environmental impacts, those impacts are considered "acceptable".

The City Council hereby declares that the EIR has identified and discussed significant effects that may occur as a result of the Project. With the implementation of the mitigation measures discussed in the EIR, these impacts can be mitigated to a level of less than significant except for the unavoidable and significant impacts discussed in Subsection 5.5, herein.

The City Council hereby declares that it has made a reasonable and good faith effort to eliminate or substantially mitigate the potential impacts resulting from the Project.

The City Council hereby declares that to the extent any mitigation measures recommended to the City are not to be incorporated, such mitigation measures are infeasible because they would impose restrictions on the Project that would prohibit the realization of specific economic, social, and other benefits that this City Council finds outweigh the unmitigated impacts.

The City Council further finds that except for the Project, all other alternatives set forth in the EIR are infeasible because they may not substantially reduce environmental impacts associated with the Project, and would prohibit the realization of the Project objectives and/or specific economic, social, or other benefits that this City Council finds outweigh any environmental benefits of the alternatives.

The City Council hereby declares that, having reduced the adverse significant environmental effects of the Project, to the extent feasible by adopting the proposed mitigation measures, having considered the entire administrative record on the Project and having weighted the benefits of the Project against its unavoidable significant impact after mitigation, the City Council has determined that the social, economic, and environmental benefits of the Project outweigh the potential unavoidable significant impacts and render those potential significant impacts acceptable based on the following considerations:

- The Project reflects the stated vision, goals and objectives of the City of Visalia.
- The Project will ensure orderly development patterns to accommodate projected increases in population through buildout of the General Plan by providing strategic land use designations that avoid or minimize land use conflicts.
- The Project will provide a variety of housing opportunities with a range of densities, styles, sizes and values that will be designed to satisfy existing and future demand for quality housing in the area.
- The Project will maximize and broaden the City's sales tax base by providing local and regional tax-generating uses.
- The Project will improve and maximize economic viability of the Project site and area by providing strategic land use designations.
- The Project will provide a residential development that assists the City in meetings its General Plan and Housing Element requirements and objectives.

As the CEQA Lead Agency for the proposed action, the City of Visalia has carefully reviewed the Project and the alternatives presented in the EIR, and fully understands the Project and Project alternatives proposed for development. Further, this City Council finds that all potential adverse environmental impacts and all feasible mitigation measures to reduce the impacts from the Project have been identified in the Draft EIR, the Final EIR and public testimony. This City

Council also finds that a reasonable range of alternatives was considered in the EIR and this document, Section 5.6, above, and finds that approval of the Project is appropriate.

In Section 5.8, the City Council has identified economic and social benefits and important policy objectives that will result from implementing the Project. The City Council has balanced these substantial social and economic benefits against the unavoidable significant adverse effects of the Project. Given the substantial social and economic benefits that will accrue from the Project, this City Council finds that these specific overriding benefits of the Project outweigh the significant impact on the environment.

Public Resource Code 21002 provides, "In the event specific economic, social and other conditions make infeasible such Project alternatives or such mitigation measures, individual projects can be approved in spite of one or more significant effects thereof." Section 21002(c) provides, "In the event that economic, social, or other conditions make it infeasible to mitigate one or more significant effects of a project on the environment, the project may nonetheless be approved or carried out at the discretion of a public agency".

Finally, California Administrative Code, Title 4, 15093(a) states, "If the benefits of a Project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered 'acceptable.'"

The City Council hereby declares that the foregoing benefits provided to the public through approval and implementation of the Project outweigh the identified significant adverse environmental impacts of the Project that cannot be mitigated. The City Council finds that each of the Project benefits outweighs the unavoidable adverse environmental impacts identified in the EIR, and finds those impacts to be acceptable.

Site Plan Review Comments

City of Visalia

315 E. Acequia Ave., Visalia, CA 93291

Site Plan Review

March 13, 2024

Site Plan Review No. 2024-029:

Pursuant to Zoning Ordinance Chapter 17.28 the Site Plan Review process has found that your application complies with the general plan, municipal code, policies, and improvement standards of the city. A copy of each Departments/Divisions comments that were discussed with you at the Site Plan Review meeting are attached to this document.

Based upon Zoning Ordinance Section 17.28.070, this is your Site Plan Review determination. However, your project requires discretionary action as stated on the attached Site Plan Review comments. You may now proceed with filing discretionary applications to the Planning Division.

This is your Site Plan Review Permit; your Site Plan Review became effective **February 21, 2024**. A site plan review permit shall lapse and become null and void one year following the date of approval unless, prior to the expiration of one year, a building permit is issued by the building official, and construction is commenced and diligently pursued toward completion.

If you have any questions regarding this action, please call the Community Development Department at (559) 713-4359.

Respectfully,

Paul Bernal
Community Development Director
315 E. Acequia Ave.
Visalia, CA 93291

Attachment(s):

- Site Plan Review Comments

City of Visalia

315 E. Acequia Ave., Visalia, CA 93291

Planning Division

Tel: (559) 713-4359; Fax: (559) 713-4814

MEETING DATE February 21, 2024

SITE PLAN NO. 2024-029

PARCEL MAP NO.

SUBDIVISION

LOT LINE ADJUSTMENT NO.

Enclosed for your review are the comments and decisions of the Site Plan Review committee. Please review all comments since they may impact your project.

☐ **RESUBMIT** Major changes to your plans are required. Prior to accepting construction drawings for building permit, your project must return to the Site Plan Review Committee for review of the revised plans.

☐ During site plan design/policy concerns were identified, schedule a meeting with

☐ Planning ☐ Engineering prior to resubmittal plans for Site Plan Review.

☐ Solid Waste ☐ Parks and Recreation ☐ Fire Dept.

☑ **REVISE AND PROCEED** (see below)

☐ A revised plan addressing the Committee comments and revisions must be submitted for Off-Agenda Review and approval prior to submitting for building permits or discretionary actions.

☐ Submit plans for a building permit between the hours of 9:00 a.m. and 4:00 p.m., Monday through Friday.

☑ Your plans must be reviewed by:

☐ CITY COUNCIL ☐ REDEVELOPMENT

☑ PLANNING COMMISSION ☐ PARK/RECREATION

☑ CUP / TPM

☐ HISTORIC PRESERVATION ☑ OTHER:

LLA

☐ **ADDITIONAL COMMENTS:**

If you have any questions or comments, please call the Site Plan Review Hotline at (559) 713-4440
Site Plan Review Committee

SITE PLAN REVIEW COMMENTS

Josh Dan, Planning Division, 559-713-4003
Date: February 21, 2024

SITE PLAN NO:	2024-029
PROJECT:	Mike Knoff – New Costco, Fuel Station, and Carwash
PROP. OWNER:	HAYES RANCH LLC
LOCATION:	NE CORNER OF W. RIGGIN + N. SHIRK
APN:	077-100-108

Planning Division Recommendation:

☒ Revise and Proceed
☐ Resubmit

Project Requirements

- Conditional Use Permit (CUP)
- Tentative Parcel Map (TPM)
- Lot Line Adjustment (LLA)
- Building Permit for any modifications

PROJECT SPECIFIC INFORMATION: February 21, 2024

1. Staff we be reviewing for consistency with Specific Plan and previous SPR comments No. 2022-162.
2. VMC Use Table 17.25.030 lines A21 (automated car washing), R44 (retail greater than 60,000 sq. ft.), and S38 (service station) are all listed as conditionally permitted in the C-MU Zone district.
3. A Tentative Parcel Map shall be required for the creation of any new parcels or a Lot Line Adjustment (LLA) for the movement of parcel lines.
4. Signage shall require a separate Building Permit submittal.
5. Building permits are required for any improvements.
6. Meet all other codes and ordinances.
7. Other information as needed.

Note:

1. **The applicant shall contact the San Joaquin Valley Air Pollution Control District to verify whether additional permits are required through the District.**
2. **Prior to a final for the project, a signed Certificate of Compliance for the MWELO standards is required indicating that the landscaping has been installed to MWELO standards.**



Sections of the Municipal Code to review:

- **17.19.060 Development standards in the C-MU zones outside the downtown area.**

NOTE: Staff recommendations contained in this document are not to be considered support for a particular action or project unless otherwise stated in the comments. The comments found on this document pertain to the site plan submitted for review on the above referenced date. Any changes made to the plan submitted must be submitted for additional review.

Signature:

BUILDING/DEVELOPMENT PLAN REQUIREMENTS
ENGINEERING DIVISION

☐	Lupe Garcia	713-4197
☐	Keyshawn Ford	713-4268
☐	Edelma Gonzalez	713-4364
☐	Sarah MacLennan	713-4271
☒	Luqman Ragabi	713-4362

ITEM NO: 4 DATE: FEBRUARY 21, 2024

SITE PLAN NO.:	**24-029**
PROJECT TITLE:	**NEW COSTCO WHOLESALE**
DESCRIPTION:	**NEW COSTCO WHOLESALE, FUEL STATION AND CAR WASH**
APPLICANT:	**MIKE KNOFF**
PROP OWNER:	**HAYES RANCH LLC**
LOCATION:	**NW CORNER OF RIGGIN AND SHIRK**
APN:	**077-100-108**

SITE PLAN REVIEW COMMENTS

☒ REQUIREMENTS (indicated by checked boxes)

☐ Install curb return with ramp, with radius;

☐ Install curb; ☐ gutter

☐ Drive approach size: ☐ Use radius return;

☐ Sidewalk: width; ☐ parkway width at

☒ Repair and/or replace any sidewalk across the public street frontage(s) of the subject site that has become uneven, cracked or damaged and may constitute a tripping hazard.

☒ Replace any curb and gutter across the public street frontage(s) of the subject site that has become uneven and has created areas where water can stand.

☐ Right-of-way dedication required. A title report is required for verification of ownership.

☐ Deed required prior to issuing building permit;

☒ City Encroachment Permit Required. ***FOR ANY WORK NEEDED WITHIN PUBLIC RIGHT-OF-WAY*** Insurance certificate with general & auto liability ($1 million each) and workers compensation ($1 million), valid business license, and appropriate contractor's license must be on file with the City, and valid Underground Service Alert # provided prior to issuing the permit. Contact Encroachment Tech. at 713-4414.

☐ CalTrans Encroachment Permit required. ☐ CalTrans comments required prior to issuing building permit. Contacts: David Deel (Planning) 488-4088;

☐ Landscape & Lighting District/Home Owners Association required prior to approval of Final Map. Landscape & Lighting District will maintain common area landscaping, street lights, street trees and local streets as applicable. Submit completed Landscape and Lighting District application and filing fee a min. of 75 days before approval of Final Map.

☐ Landscape & irrigation improvement plans to be submitted for each phase. Landscape plans will need to comply with the City's street tree ordinance. The locations of street trees near intersections will need to comply with Plate SD-1 of the City improvement standards. A street tree and landscape master plan for all phases of the subdivision will need to be submitted with the initial phase to assist City staff in the formation of the landscape and lighting assessment district.

☐ Grading & Drainage plan required. If the project is phased, then a master plan is required for the entire project area that shall include pipe network sizing and grades and street grades. ☐ Prepared by registered civil engineer or project architect. ☐ All elevations shall be based on the City's benchmark network. Storm run-off from the project shall be handled as follows: a) ☐ directed to the City's existing storm drainage system; b) ☐ directed to a permanent on-site basin; or c) ☐ directed to a temporary on-site basin is required until a connection with adequate capacity is available to the City's storm drainage system. On-site basin: : maximum side slopes, perimeter fencing required, provide access ramp to bottom for maintenance.

☐ Grading permit is required for clearing and earthwork performed prior to issuance of the building permit.

☒ Show finish elevations. (Minimum slopes: A.C. pavement = 1%, Concrete pavement = 0.25%. Curb & Gutter =.20%, V-gutter = 0.25%)

☐ Show adjacent property grade elevations. A retaining wall will be required for grade differences greater than 0.5 feet at the property line.

☐ All public streets within the project limits and across the project frontage shall be improved to their full width, subject to available right of way, in accordance with City policies, standards and specifications.

☐ Traffic indexes per city standards:

☐ Install street striping as required by the City Engineer.
☐ Install landscape curbing (typical at parking lot planters).
☐ Minimum paving section for parking: 2" asphalt concrete paving over 4" Class 2 Agg. Base, or 4" concrete pavement over 2" sand.
☐ Design Paving section to traffic index of 5.0 min. for solid waste truck travel path.
☐ Provide "R" value tests: each at
☐ Written comments required from ditch company Contacts: James Silva 747-1177 for Modoc, Persian, Watson, Oakes, Flemming, Evans Ditch and Peoples Ditch; Jerry Hill 686-3425 for Tulare Irrigation Canal, Packwood and Cameron Creeks; Bruce George 747-5601 for Mill Creek and St. John's River.
☐ Access required on ditch bank, 15' minimum ☐ Provide wide riparian dedication from top of bank.
☐ Show Valley Oak trees with drip lines and adjacent grade elevations. ☐ Protect Valley Oak trees during construction in accordance with City requirements.
☐ A permit is required to remove Valley Oak trees. Contact Public Works Admin at 713-4428 for a Valley Oak tree evaluation or permit to remove. ☐ A pre-construction conference is required.
☐ Relocate existing utility poles and/or facilities.
☐ Underground all existing overhead utilities within the project limits. Existing overhead electrical lines over 50kV shall be exempt from undergrounding.
☐ Subject to existing Reimbursement Agreement to reimburse prior developer:
☒ Fugitive dust will be controlled in accordance with the applicable rules of San Joaquin Valley Air District's Regulation VIII. Copies of any required permits will be provided to the City.
☐ If the project requires discretionary approval from the City, it may be subject to the San Joaquin Valley Air District's Rule 9510 Indirect Source Review per the rule's applicability criteria. A copy of the approved AIA application will be provided to the City.
☐ If the project meets the one acre of disturbance criteria of the State's Storm Water Program, then coverage under General Permit Order 2009-0009-DWQ is required and a Storm Water Pollution Prevention Plan (SWPPP) is needed. A copy of the approved permit and the SWPPP will be provided to the City.

☒ Comply with prior comments. ☐ Resubmit with additional information. ☐ Redesign required.

Additional Comments:

1. ***Proposed retail, fuel, and carwash development will not be a stand-alone project separate of the underlying Specific Plan, but rather incorporated into the entitlements. Ensure compliance with Specific Plan and all previous entitlements.***

SUMMARY OF APPLICABLE DEVELOPMENT IMPACT FEES

Site Plan No: **24-029**
Date: **02/21/2024**

Summary of applicable Development Impact Fees to be collected at the time of building permit:

(Preliminary estimate only! Final fees will be based on the development fee schedule in effect at the time of building permit issuance.)

(Fee Schedule Date:**08/19/2023**)
(Project type for fee rates:**RETAIL (see spr 22-162)**

☒ Existing uses may qualify for credits on Development Impact Fees.

FEE ITEM	FEE RATE
☐ Groundwater Overdraft Mitigation Fee	
☐ Transportation Impact Fee	
☐ Trunk Line Capacity Fee	
☐ Treatment Plant Fee	
☐ Sewer Front Foot Fee	
☐ Storm Drain Acq/Dev Fee	
☐ Park Acq/Dev Fee	
☐ Northeast Specific Plan Fees	
☐ Waterways Acquisition Fee	
☐ Public Safety Impact Fee: Police	
☐ Public Safety Impact Fee: Fire	
☐ Public Facility Impact Fee	
☐ Parking In-Lieu	

Reimbursement:

1.) No reimbursement shall be made except as provided in a written reimbursement agreement between the City and the developer entered into prior to commencement of construction of the subject facilities.
2.) Reimbursement is available for the development of arterial/collector streets as shown in the City's Circulation Element and funded in the City's transportation impact fee program. The developer will be reimbursed for construction costs and right of way dedications as outlined in Municipal Code Section 16.44. Reimbursement unit costs will be subject to those unit costs utilized as the basis for the transportation impact fee.
3.) Reimbursement is available for the construction of storm drain trunk lines and sanitary sewer trunk lines shown in the City's Storm Water Master Plan and Sanitary Sewer System Master Plan. The developer will be reimbursed for construction costs associated with the installation of these trunk lines.

Luqman Ragabi

Luqman Ragabi

SPR 24029
COSTCO WAREHOUSE
077100108

City of Visalia
Building: Site Plan Review Comments

NOTE: These are general comments and DO NOT constitute a complete plan check for your specific project Please refer to the applicable California Code & local ordinance for additional requirements.

- [x] A building permit will be required. FOR EACH BUILDING — *For information call (559) 713-4444*
- [x] Submit 1 digital set of professionally prepared plans and 1 set of calculations. (Small Tenant Improvements)
- [ ] Submit 1 digital set of plans prepared by an architect or engineer. Must comply with 2016 California Building Cod Sec. 2308 for conventional light-frame construction or submit 1 digital set of engineered calculations.
- [ ] Indicate abandoned wells, septic systems and excavations on construction plans.

You are responsible to ensure compliance with the following checked items:

- [x] Meet State and Federal requirements for accessibility for persons with disabilities.
- [ ] A path of travel, parking and common area must comply with requirements for access for persons with disabilities.
- [ ] All accessible units required to be adaptable for persons with disabilities.
- [ ] Maintain sound transmission control between units minimum of 50 STC.
- [ ] Maintain fire-resistive requirements at property lines.
- [ ] A demolition permit & deposit is required. — *For information call (559) 713-4444*
- [ ] Obtain required permits from San Joaquin Valley Air Pollution Board. — *For information call (661) 392-5500*
- [x] Plans must be approved by the Tulare County Health Department. — *For information call (559) 624-8011*
- [x] Project is located in flood zone AE. * [ ] Hazardous materials report. MEET FEMA FLOOD REQUIREMENTS
- [ ] Arrange for an on-site inspection. (Fee for inspection $157.00) — *For information call (559) 713-4444*
- [x] School Development fees. COMMERCIAL: $0.70 PER SF
- [ ] Park Development fee $_____, per unit collected with building permits.
- [ ] Additional address may be required for each structure located on the site. — *For information call (559) 713-4320*
- [ ] Acceptable as submitted
- [ ] No comments at this time

Additional comments: PROVIDE SAND/OIL INTERCEPTOR AT THE CARWASH AND FUEL CANOPY. PROVIDE GREASE INTERCEPTOR AND TYPE I HOOD. BUILDING SHALL BE PROTECTED BY TYPE 13 FIRE SPRINKLER SYSTEM. PROVIDE BIKE RACK AND BIKE STORAGE, EV CHARGING PARKING. PROVIDE RAISED CIRCULATION ROUTE ADJACENT TO VEHICULAR TRAFFIC. LANDSCAPING SHALL MEET THE MWELO REQUIREMENTS. BUILDING SHALL BE EQUIPPED WITH (PV) AND BATTERY STORAGE.

VAL GARCIA 2/20/24

Site Plan Comments
Visalia Fire Department
Corbin Reed, Fire Marshal
420 N. Burke
Visalia CA 93292
559-713-4272 office
prevention.division@visalia.city

Date	February 20, 2024
Item #	4
Site Plan #	24029
APN:	077100108

- The Site Plan Review comments are issued as **general overview** of your project. With further details, additional requirements will be enforced at the Plan Review stage. Please refer to the 2022 California Fire Code (CFC), 2022 California Building Codes (CBC) and City of Visalia Municipal Codes.

- Construction and demolition sites prior to and during construction shall comply with the following:
  - **Water supply** for fire protection, either temporary or permanent, shall be made available as soon as combustible materials arrive on the site. 2022 CFC §3312
  - Provide an all-weather, 20 feet width **construction access road** capable of holding a 75,000 pound fire apparatus. Fire apparatus access shall be provided within 100 feet of temporary or permanent fire department connections. 2022 CFC §3310

- **Address numbers** must be placed on the exterior of the building in such a position as to be clearly and plainly visible from the street. Numbers will be at least four inches (4") high and shall be of a color to contrast with their background. If multiple addresses are served by a common driveway, the range of numbers shall be posted at the roadway/driveway. 2022 CFC 505.1

- All hardware on **exit doors, illuminated exit signs and emergency lighting** shall comply with the 2022 California Fire Code. This includes all locks, latches, bolt locks, panic hardware, fire exit hardware and gates.

- **Commercial dumpsters** with 1.5 cubic yards or more shall not be stored or placed within 5 feet of combustible walls, openings, or a combustible roof eave line except when protected by a fire sprinkler system. 2022 CFC 304.3.3

- A **Knox Box key lock system** is required. Where access to or within a structure or area is restricted because of secured openings (doors and/or gates), a key box is to be installed in an approved location. Go to knoxbox.com to order and please allow adequate time for shipping and installation. 2022 CFC 506.1

- If your business handles **hazardous material** in amounts that exceed the Maximum Allowable Quantities listed on Table 5003.1.1(1), 5003.1.1(2), 5003.1.1(3) and 5003.1.1(4) of the 2022 California Fire Code, you are required to submit an emergency response plan to the Tulare County Health Department. Also you shall indicate the quantities on your building plans and prior to the building final inspection a copy of your emergency response plan and Safety Data Sheets shall be submitted to the Visalia Fire Department.

- Zero lot line, multi-family or mobile home park developments shall be provided with **fire hydrants** every four hundred (400) lineal feet of frontage. In isolated developments, no less than two (2) fire hydrants shall be provided. The exact location and number of fire hydrants shall be at the discretion of the fire marshal, fire chief and/or their designee. VMC 16.36.120(5); 2022 CFC §507, App B and C

- Where a portion of any building is more than 400 feet from a hydrant on a fire apparatus access road, **on-site fire hydrant(s)** shall be provided. 2022 CFC 507.5.1, App B and C

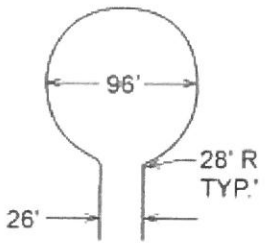
- Due to insufficient building information, the number and distance between **fire hydrants** cannot be determined by the Site Plan Review process. The number of fire hydrants and distance between required fire hydrants shall be determined by utilizing type of construction and square footage in accordance with 2022 CFC §507, App B and C.

  To determine **fire hydrant** location(s) and distribution the following information should be provided to the Site Plan Review committee: Type of construction_____ Square footage _____

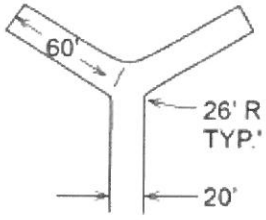
- A **fire apparatus access road(s)** shall be provided and extend within 150 feet of all portions of the building and all portions of the exterior walls of the first story as measured by an approved route around the exterior. Minimum turning radius for emergency fire apparatus shall be 20 feet inside radius and 43 feet outside radius. Fire apparatus access roads shall have an unobstructed width of not less than the following (2022 CFC 503.1.1)
  - 20 feet width, exclusive of shoulders (No Parking)
  - More than 26 feet width, exclusive of shoulders (No Parking one side)
  - More than 32 feet wide, exclusive of shoulders (Parking permitted on both sides)

- Buildings or portions of buildings with a vertical distance between the grade plan and the highest roof surface that exceed 30 feet shall provide an approved **fire apparatus access road** capable of accommodating fire department aerial apparatus.
  - Access roads shall have a minimum unobstructed width of 26 feet, exclusive of shoulders.
  - Access routes shall be located within a minimum of 15 feet and maximum of 30 feet from the building, and shall be positioned parallel to one entire side of the building.
  - Overhead utility and power lines shall not be located over the aerial fire apparatus access road or between the aerial fire apparatus road and the building.

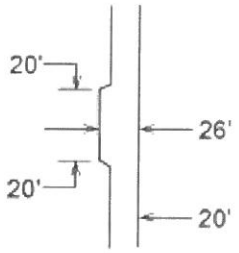
- Fire apparatus access roads in excess of 150 feet that dead end shall be provided with a **turnaround**. Fire apparatus access roads with a length of 151-500 feet shall be a minimum of 20 feet in width. Length of 501-750 feet shall be 26 feet in width. 2022 CFC Table D103.4



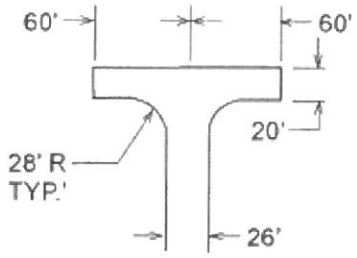
96' DIAMETER
CUL-DE-SAC



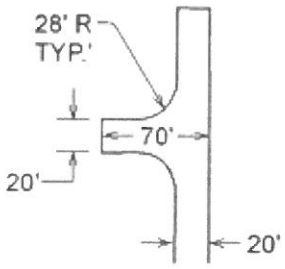
60' "Y"



MINIMUM CLEARANCE
AROUND A FIRE
HYDRANT



120' HAMMERHEAD



ACCEPTABLE ALTERNATIVE
TO 120' HAMMERHEAD

- Approved **No PARKING – FIRE LANE signs** shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. Signs shall have a minimum dimension of 12 inches wide by 18 inches high and have red letters on a white reflective background. 2022 CFC 503.3/ D103.6

SIGN TYPE "A" SIGN TYPE "C" SIGN TYPE "D"



- An **automatic fire sprinkler system** will be required for this building. Also, a fire hydrant is required within 50 feet of the Fire Department Connection (FDC). Where an existing building is retrofitted with a sprinkler system (NFPA 13 or NFPA 13R) a fire hydrant shall be provided within 75 feet of the FDC. An additional 25 feet of distance between a fire hydrant and FDC may be granted when a fire sprinkler Density is designed with an additional 25%. 2022 CFC §912 and VMC 8.20.010 subsection C103.4

- Locking **fire department connection (FDC) caps** are required. The caps shall be ordered using an approved Knox Authorization Order Form. Go to knoxbox.com to order and please allow adequate time for shipping and installation. 2022 CFC 912.4.1

- Commercial cooking appliances and domestic cooking appliances used for commercial purposes that produce grease laden vapors shall be provided with a **Type 1 Hood**, in accordance with the California Mechanical Code, and an automatic fire extinguishing system. 2022 CFC 904.12 & 609.2

- Comply with Section 510 of the California Fire Code for emergency responder radio coverage.
- Traffic calming devices shall be prohibited unless approved by the fire code official. Visalia Fire Department current standards for approved traffic calming are speed tables that can be traversed at 25 miles per hour.

- All exterior risers, drain/test valves and backflow devices shall be protected from unauthorized tampering by approved means. Protection method shall be indicated on building plans. 2022 CFC 903.3.8.4.1

Corbin Reed
Fire Marshal

City of Visalia
Police Department
303 S. Johnson St.
Visalia, CA 93292
(559) 713-4370

Date: 02/14/24
Item: 4
Site Plan: SPR24029
Name: Robert Avalos

Site Plan Review Comments

☐ No Comment at this time.

☐ Request opportunity to comment or make recommendations as to safety issues as plans are developed.

☐ Public Safety Impact Fee:
Ordinance No. 2001-11 Chapter 16.48 of Title 16 of the Visalia Municipal Code
Effective date - August 17, 2001.

☐ Impact fees shall be imposed by the City pursuant to this Ordinance as a condition of or in conjunction with the approval of a development project. "New Development or Development Project" means any new building, structure or improvement of any parcels of land, upon which no like building, structure of improvement previously existed. *Refer to Engineering Site Plan comments for fee estimation.

☐ Not enough information provided. Please provide additional information pertaining to:

☐ Territorial Reinforcement: Define property lines (private/public space).

☐ Access Controlled/ Restricted etc.

☑ lighting Concerns:
ample lighting around property to help deter crime

☐ Traffic Concerns:

☑ Surveillance Issues:
interior/exterior surveillance cameras to help deter crime

☑ Line of Sight Issues:
low perimeter shrubs to help deter crime

☑ Other Concerns:
enroll/participation in the trespass enforcement program (T.E.P.)

SITE PLAN REVIEW COMMENTS

CITY OF VISALIA TRAFFIC SAFETY DIVISION

February 21, 2024

ITEM NO: 4 **Added to Agenda** **MEETING TIME: 09:45**

SITE PLAN NO: SPR24029 ASSIGNED TO: Josh Dan Josh.Dan@visalia.cit

PROJECT TITLE: Mike Knoff

DESCRIPTION: New Costco Wholesale, Fuel Station and Car Wash, as described in the project narrative

APPLICANT: Michael Knoff - Applicant

OWNER: HAYES RANCH LLC

APN: 077100108

LOCATION: Northeast corner of West Riggin Avenue and North Shirk Street.

THE TRAFFIC DIVISION WILL PROHIBIT ON-STREET PARKING AS DEEMED NECESSARY

☐ No Comments

☐ See Previous Site Plan Comments

☒ Install Street Light(s) per City Standards at time of development.

☒ Install Street Name Blades at Locations at time of development.

☒ Install Stop Signs at ***driveway exit*** Locations.

☒ Construct parking per City Standards PK-1 through PK-4 at time of development.

☒ Construct drive approach per City Standards at time of development.

☐ Traffic Impact Analysis required (CUP)

- ☐ Provide more traffic information such as . Depending on development size, characteristics, etc., a TIA may be required.

☐ Additional traffic information required (Non Discretionary)

- ☐ Trip Generation - Provide documentation as to concurrence with General Plan.
- ☐ Site Specific - Evaluate access points and provide documentation of conformance with COV standards. If noncomplying, provide explanation.
- ☐ Traffic Impact Fee (TIF) Program - Identify improvments needed in concurrence with TIF.

Additional Comments:

- Traffic Impact Analysis (Site Specific) has been submitted and approved.

Leslie Blair

Leslie Blair

24-029

City of Visalia
7579 Ave. 288, Visalia, CA 93277
Public Works
(559) 713-4465 Fax (559) 713-4501

SITE PLAN REVIEW DATE: 02/21/24

WASTEWATER COLLECTIONS AND PRETREATMENT DIVISION (QUALITY ASSURANCE)
SITE PLAN REVIEW COMMENTS

SITE PLAN REVIEW NO: 24029

PROJECT NAME: COSTCO CAR WASH AND FUEL STN

THE PROJECT IS SUBJECT TO THE FOLLOWING REQUIREMENTS FROM WASTEWATER PRETREATMENT DIVISION (QUALITY ASSURANCE):

☐ SUBMISSION OF WASTEWATER DISCHARGE PERMIT APPLICATION/QUESTIONAIRRE/OTHER REGULATORY FORMS

- FORM REQUIRED_____
- FORM REQUIRED_____
- FORM REQUIRED_____

■ INSTALLATION OF SAND AND GREASE INTERCEPTOR

☐ INSTALLATION GREASE INTERCEPTOR

☐ OTHER _____

☐ SITE PLAN REVIEWED-NO COMMENTS

CONTACT THE WASTEWATER PRETREATMENT DIVISION (QUALITY ASSURANCE) AT (559) 713-4529 OR JESSICA.SANDOVAL@VISALIA.CITY, IF YOU HAVE ANY QUESTIONS.

COMMENTS:

DATE REVIEWED: 02/20/24

CITY OF VISALIA
SOLID WASTE DIVISION
336 N. BEN MADDOX
VISALIA CA. 93291
713 - 4532
COMMERCIAL BIN SERVICE

24029

February 21, 2024

	No comments.
XX	See comments below
	Revisions required prior to submitting final plans. See comments below.
	Resubmittal required. See comments below.
XX	Customer responsible for all cardboard and other bulky recyclables to be broken down before disposing of in recycle containers
XX	ALL refuse enclosures must be city standard R-1 OR R-2 & R-3 OR R-4
XX	Customer must provide combination or keys for access to locked gates/bins
	Type of refuse service not indicated.
	Location of bin enclosure not acceptable. See comments below.
	Bin enclosure insufficient to comply with state recycling mandates. See comments for suggestions.
	Inadequate number of bins to provide sufficient service. See comments below.
	Drive approach too narrow for refuse trucks access. See comments below.
	Area not adequate for allowing refuse truck turning radius of : Commercial 50 ft. outside 36 ft. inside; Residential 35 ft. outside, 20 ft. inside.
XX	Paved areas should be engineered to withstand a 55,000 lb. refuse truck.
XX	Bin enclosure gates are required
	Hammerhead turnaround must be built per city standards.
	Cul - de - sac must be built per city standards.
XX	Bin enclosures are for city refuse containers only. Grease drums or any other items are not allowed to be stored inside bin enclosures.
XX	Area in front of refuse enclosure must be marked off indicating no parking
XX	Enclosure will have to be designed and located for a STAB service (DIRECT ACCESS) with no less than 38' clear space in front of the bin, included the front concrete pad.
	Customer will be required to roll container out to curb for service.
XX	Must be a concrete slab in front of enclosure as per city standards, the width of the enclosure by ten(10) feet, minimum of six(6) inches in depth.
	Roll off compactor's must have a clearance of 3 feet from any wall on both sides and there must be a minimum of 53 feet clearance in front of the compactor to allow the truck enough room to provide service.
XX	City ordinance 8.28.120-130 (effective 07/19/18) requires contractor to contract with City for removal of construction debris unless transported in equipment owned by contractor or unless contracting with a franchise permittee for removal of debris utilizing roll-off boxes.

Comment

Solid waste services will include trash, recycling, and organics recycling, per the State of California's mandatory recycling laws (AB-341 & AB-1826). Customer has identified two compactor collection services for trash and organics collections, and a city standard R3/R4 double enclosure for commercial recycling bins. Customer confirmed this site will share collection services with the proposed gas station and car wash on this parcel. Enclosure gates are required and must swing 180 degrees, clearing all curbing. Cane bolts must be included to secure gates when opened.

Jason Serpa, Solid Waste Manager, 559-713-4533
Edward Zuniga, Solid Waste Supervisor, 559-713-4338

Nathan Garza, Solid Waste, 559-713-4532

CALIFORNIA WATER SERVICE

Visalia District 216 North Valley Oaks Drive
Visalia, CA 93292 *Tel:* (559) 624-1600

Site Plan Review Comments From: California Water Service Scott McNamara, Superintendent 216 N Valley Oaks Dr. Visalia, CA 93292 559-624-1622 Office 559-735-3189 Fax smcnamara@calwater.com	Date: 02/21/2024 Item # 4 Site Plan # 24-029 Project: Costco Description: Applicant: Michael Knoff Location: NEC of Riggin and Shirk APN: 077-100-108

The following comments are applicable when checked:

☐ Re-submit.

☐ No Comments at this time.

☒ **Fire Hydrants**

Comments- Per Visalia Fire Department requirements. If street frontage hydrants are required off existing water main, Cal Water will utilize our own contractor for that work and that work will be paid for by the developer/customer. The location of those hydrants is to be approved by Visalia Fire.

☒ **Services**

Comments- Service(s) will need to be installed for this project. The five parcels to the south of Costco (fronting Riggin) will also need services installed either with this project or when they proceed with development.

☒ **Mains**

Comments- There is an existing water main on Riggin. The water main will need to be installed at a minimum on Shirk (from the Riggin intersection) to your north property line and/or on Denton (from the Riggin intersection) to your north property line.

☒ **Backflow Requirements**

Comments- Will be required if any parcel is for multi-family, commercial, or has multiple services on one parcel. Please contact Cross Connection Control Specialist, Juan Cisneros at 559-624-1670 or visaliabackfow@calwater.com for a backflow install packet.

Additional Comments:

☒ Please contact New Business Superintendent Sedelia Sanchez at 559-624-1621 or ssanchez@calwater.com to start your project with Cal Water.

☐

☐

Susan Currier

From: Lau, Scott@DOT <Scott.Lau@dot.ca.gov>
Sent: Tuesday, February 27, 2024 11:31 AM
To: Susan Currier
Cc: Deel, David@DOT; Duran, Braden@DOT
Subject: Caltrans response to Visalia SPR 022124

Hi,

I have reviewed Visalia's SPR Agenda for February 21, 2024.

1. SPR 24026 – Turning Point Visalia: No comments.
2. SPR 24027 – Marquez 4-Plex: **Reviewing.**
3. SPR 24028 – Day Spa Massage: No comments.
4. SPR 24029 – New Costco Wholesale, Gas, and Car Wash: **Reviewing.**
5. SPR 24030 – Stevenson Street Massage Salon: No comments.
6. SPR 24031 – Loving Littles Preschool Expansion: No comments.
7. SPR 24032 – Davis Parcel Split: No comments.

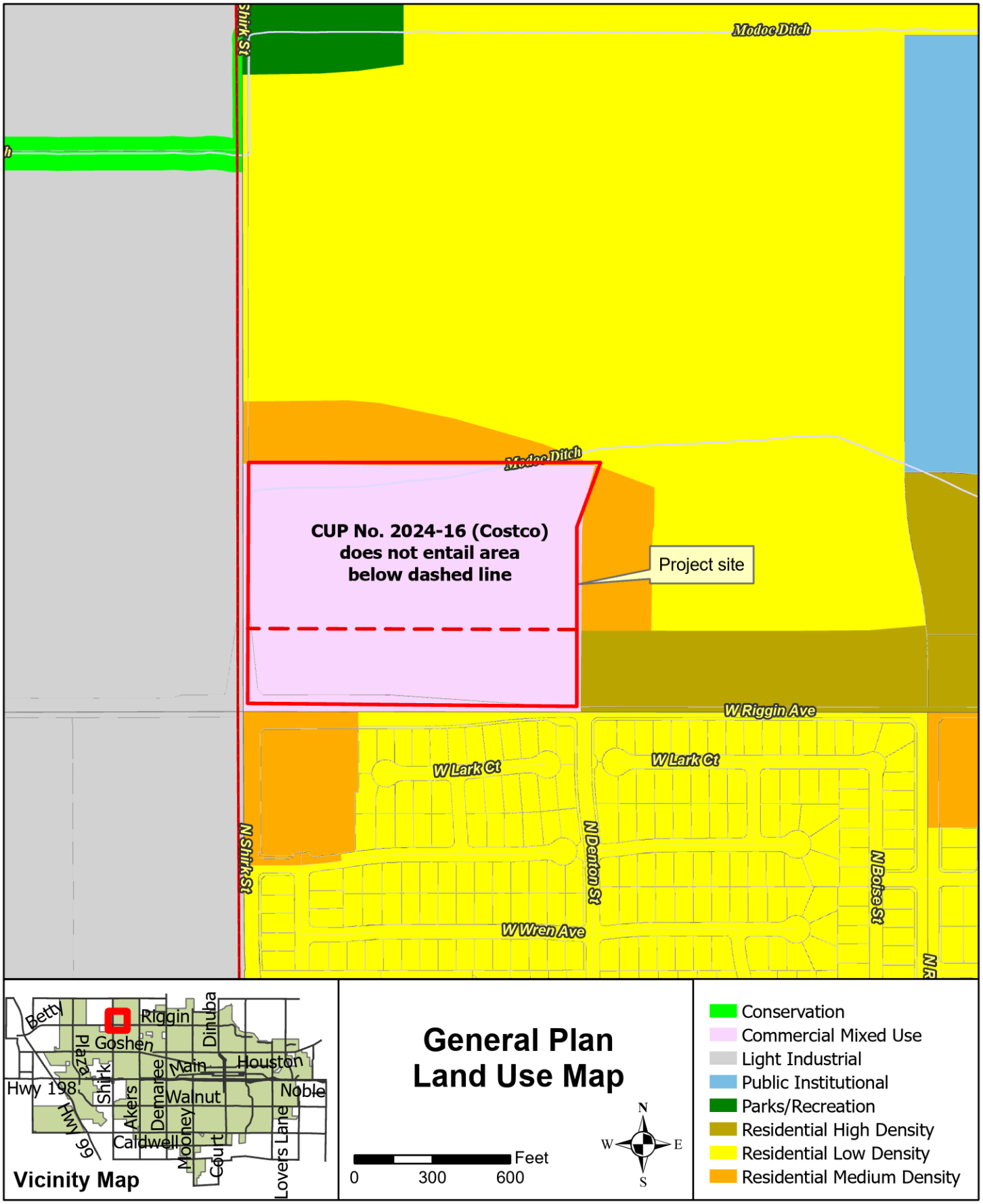
Respectfully,

Scott Lau
Associate Transportation Planner
California Department of Transportation
District 6 Transportation Planning – Regional
1352 West Olive Ave, Fresno, CA 93728
Phone: 559.981.7341
Web: Caltrans District 6



Conditional Use Permit Nos. 2024-16 & 2024-27

Location: The site is located at the northeast corner of West Riggin Avenue and North Shirk Street (APN: 077-100-108) [portion].



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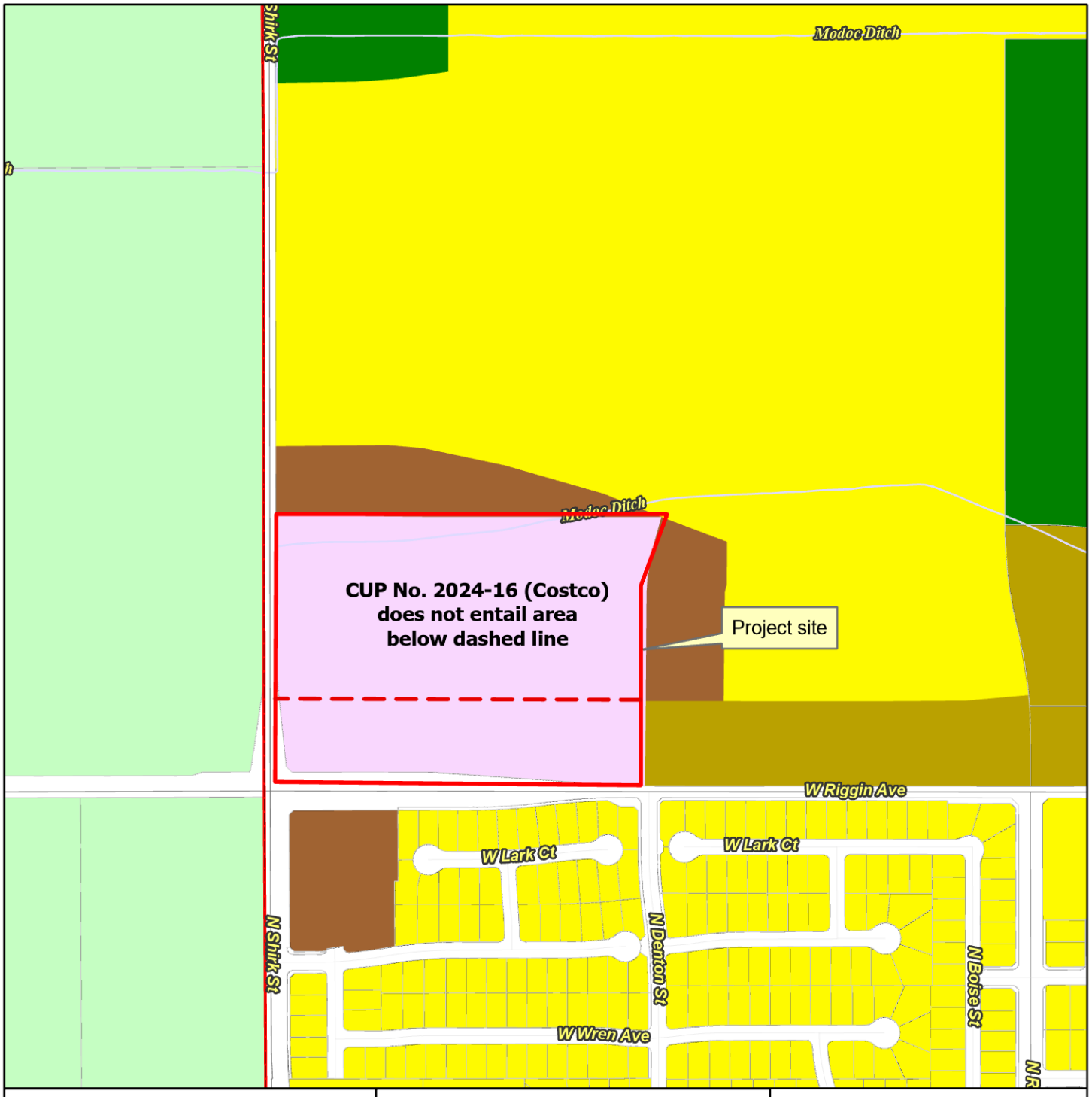

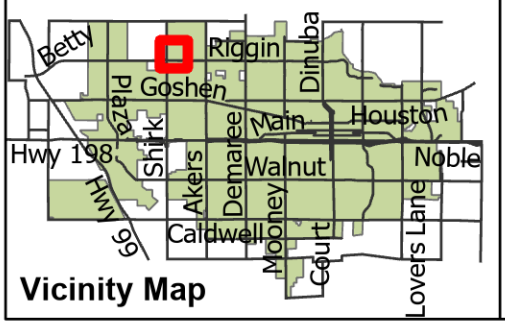

Zoning Map

Feet
0 300 600

N W E S

- C-MU Mixed Use Commercial
- QP Quasi-Public
- R-1-5 Single-family Residential
- R-M-2 Multi-family Residential
- R-M-3 Multi-family Residential
- County Areas

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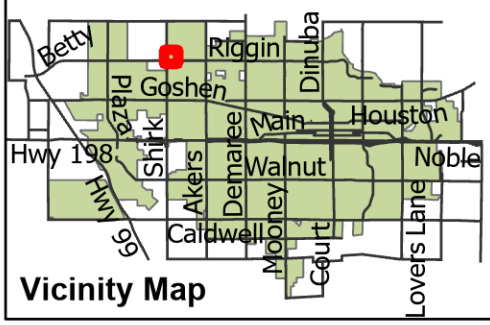

Aerial Photo

Imagery Date: 2024

0 300 600 Feet

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Conditional Use Permit Nos. 2024-16 & 2024-27

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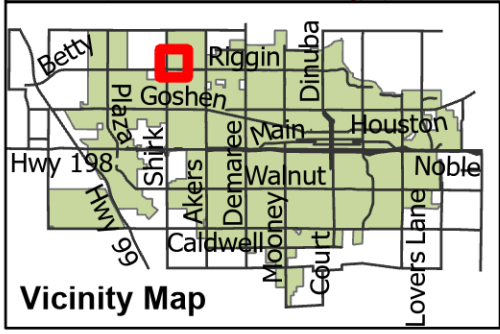

Location Map

Feet
0 300 600 900

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REPORT TO CITY OF VISALIA PLANNING COMMISSION

HEARING DATE: July 22, 2024

PROJECT PLANNER: Brandon Smith, Principal Planner
Phone: (559) 713-4636
E-mail: brandon.smith@visalia.city

SUBJECT: **Conditional Use Permit No. 2024-27:** A request by West Star Construction, Inc. to adopt a master sign program associated with a new commercial center, including the addition of wall mounted signs and monument signs that exceed City standards for height and sign area. The property is located within the City's Commercial Mixed Use (C-MU) zone district. The project site is located at the northeast corner of Shirk Street and Riggin Avenue. (APN: 077-100-108 [portion])

STAFF RECOMMENDATION

Staff recommends approval of Conditional Use Permit No. 2024-27, as conditioned, based upon the findings in Resolution No. 2024-45. The staff recommendation is based on the conclusion that the request is consistent with the Zoning Ordinance, including the Sign Ordinance, and with the Carleton Acres Specific Plan.

RECOMMENDED MOTION

I move to approve Conditional Use Permit No. 2024-27, based on the findings and conditions in Resolution No. 2024-45.

PROJECT DESCRIPTION

West Star Construction, Inc. is requesting the adoption of a master sign program ("MSP", see Exhibit "A") that applies to the Phase 1 Commercial portion of the Carleton Acres Specific Plan. The boundaries of the master sign program (see site plan included as page 4 of Exhibit "A") consist of a 29-acre commercial-zoned site located on the northeast corner of West Riggin Avenue and North Shirk Street. The commercial site will be comprised of eight parcels, wherein five parcels on the Riggin Avenue frontage are anticipated to be developed by the applicant, West Star Construction Inc., and three parcels in the back will be developed by Costco.

The MSP is being proposed in conjunction with the development of the commercial site, which is anticipated to break ground in 2025. The City Council adopted the Carleton Acres Specific Plan on October 2, 2023, which included development standards for future commercial development on the project site and a preliminary site plan for the commercial site. The Planning Commission approved a commercial parcel map for the site on September 11, 2023. While the Specific Plan provides guiding policies for the vision and quality of the signage, the Specific Plan directs that the developer will submit a separate sign master plan for review and approval by the Architecture Design Committee and the City of Visalia, as the Specific Plan does not serve as a commercial master sign program (refer to Specific Plan, pages 101 and 107). The MSP provides standards for freestanding (monument) signs at prominent gateways and entry points, and for tenant signage which includes wall signs and ancillary signs.

The desire for a MSP also comes in response to providing sufficient wall sign area for the 159,212 square foot Costco Warehouse building. The MSP proposes 522 square feet of wall signage for the warehouse building (divided over the south and west building facades), 84 square feet of signage for the fuel canopy, and 74 square feet of signage for the car wash. A

large anchor store such as Costco was anticipated as part of the commercial site at this location within the Specific Plan, though a formal entitlement for the conditionally allowed uses (i.e., CUP No. 2024-16) was filed earlier this year and is also scheduled for public hearing by the Planning Commission on July 22, 2024.

Standards are provided for two types of monument signs ("6 Tenants" and "8 Tenants") which will identify the commercial center's tenants as well as the community's name (i.e., Carleton Acres). A total of three multi-tenant monument signs are proposed, at the two corners of the commercial center (i.e. Shirk / Riggin and Denton / Riggin) and at an access drive located mid-block on Riggin. The two "8 Tenants" monument signs located at the signalized intersections are 11 feet in height and have 49 square feet of tenant identification plus 20 square feet of Carleton Acres identification. The "6 Tenants" monument sign located mid-block is 9 feet in height and has 36 square feet of tenant identification plus the 20 square feet of Carleton Acres identification.

The MSP further proposes wall signage standards for the non-anchor tenants that generally conforms to the City's Sign Ordinance standard formula of 2 square feet per 1 lineal foot of building frontage, up to a maximum 150 square feet for a tenant.

BACKGROUND INFORMATION

General Plan Land Use Designation	Commercial Mixed Use	
Zoning	Commercial Mixed Use (C-MU)	
Surrounding Zoning and Land Use	North:	Multi-family Residential (R-M-2) / Vacant land
	South:	Single-family Residential (R-1-5) & Multi-family Residential (R-M-2) / Riggin Avenue, senior duplex units, subdivision tract homes
	East:	Multi-family Residential (R-M-2) / Vacant land
	West:	Light Industrial (I-L) / Shirk Street, vacant land
Environmental Review	Categorical Exemption No. 2024-38	
Site Plan	N/A	

RELATED PLANS & POLICIES

See separate Municipal Ordinance chapters pertaining to conditional use permits and master sign programs.

RELATED PROJECTS

Carleton Acres Specific Plan (Specific Plan No. 2021-13): A request to adopt a new specific plan (Carleton Acres Specific Plan) consisting of 507 acres, including districts for low, medium, and high density residential, commercial mixed use, neighborhood commercial, parks / open space, and public institutional. The specific plan contains policy language and regulations which apply to the project site. The Specific Plan was recommended for approval by the Planning Commission on September 11, 2023, and approved by City Council on October 2, 2023.

Recently, on June 12, 2023, the Planning Commission approved a master sign program for Sequoia Mall (Conditional Use Permit No. 2023-15) in accordance with standards contained in Visalia Municipal Code Section 17.38.140. (See discussion below on Monument Signs).

PROJECT EVALUATION

Staff concludes that the proposed Conditional Use Permit, as modified through conditions of approval, can be supported based on its consistency with the purpose and intent of the Zoning Ordinance, particularly Section 17.48.140 pertaining to Master Sign Programs. Portions of the Conditional Use Permit that propose sign areas exceeding the Sign Ordinance standards can be supported based on concessions that have been granted for other large scale (i.e. larger than 100,000 square feet) warehouse buildings within the City (i.e. Costco near Cameron Ave. & Mooney Blvd. and Walmart on Noble Ave.).

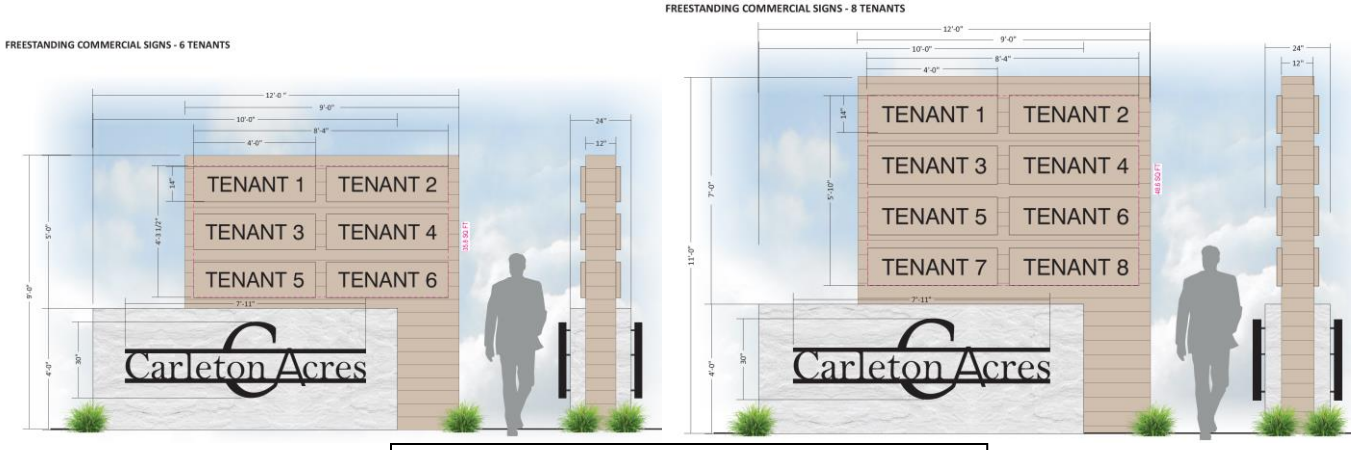
Leading up to the submittal of the proposed sign program, staff and the applicant worked through an iteration of the sign program to ensure that it meets the requirements for master sign programs identified in Sign Ordinance Section 17.48.140. Staff also worked separately with representatives from Costco on attaining a total sign area that was within range of the approved signage for the existing Costco building at Cameron & Mooney, which is 395 square feet.

The proposed MSP contains minor variations in the permitted sign area for the monument signs. Staff considers some of the unique circumstances applicable to this commercial site as reasons in support of the MSP with variations in signage. For example, the monument signs identify the name of the community (associated with the specific plan) which increases their total sign area, and the commercial center was planned through a parcel map and specific plan.

The Costco signage greatly exceeds the maximum 150 square feet City standard of wall sign area applied to single tenants, however the justification for the increase is the large size of the building and similar amounts of signage applied through variances or through a specific plan. Costco has provided their own memorandum (see Exhibit “B”) addressing the warehouse’s signs exceeding City standards.

West Star Construction currently represents the property owner for the entire area within the master sign program boundaries, however upon recording of a final parcel map, it is anticipated that some parcels will change ownership, such as those to be occupied by Costco. Staff has included Condition No. 2, as a recommended condition of approval, that any property located within the sign program boundary lines, whether or not owned by the applicant, shall be subject to the Master Sign Program.

Proposed Monument Signs



MSP Illustrations of Proposed Monument Signs

The proposed monument signs described in the MSP are double-sided structures that include the halo-lit community name and internally illuminated panels for tenants within the center. The two sign types have identical composition and architectural finish but vary in their scale and size as follows:

	6 Tenants	8 Tenants	City Standard (17.48.110(C))
Number of Signs	1	2	
General Locations	Mid-block entry	Shirk & Riggin and Denton & Riggin	
Overall Height	9'	11'	12'
Overall Tenant Panel Sign Area per side*	35.8 square feet	48.6 square feet	35'
Number of Tenant Panels per side	6	8	N/A
"Carleton Acres" sign area*	19.8 square feet	19.8 square feet	**

** Measured as one rectangle around signs.*

*** No regulation. Commercial center identification signs are typically permitted approved through a master sign program wherein their sign areas are not counted toward the sign's overall allowed sign area.*

In the past staff has considered, and the Planning Commission has approved, entitlements allowing for larger sized and/or multiple monument signs for shopping centers associated with a specific plan or in some cases a conditional use permit.

- Orchard Walk Specific Plan (located on both sides of Dinuba Blvd. between Riggin Avenue and Shannon Parkway): Approved for two 25-foot tall pylon with signage not above 20-foot height and with 140 square feet of sign area per side, and up to nine additional monument signs with 12-foot height and 20 square feet of sign copy per side (to date only four such signs have been installed).
- South Packwood Creek Specific Plan & The Commons at Visalia Parkway master sign program (both located on Mooney Boulevard south of Caldwell): Approved with monument signs with sign copy area ranging from 50 to 70 square feet per side. Both centers were permitted with two monument signs along a western frontage on Mooney (the Packwood Creek center has a Target and a multi-tenant monument sign).
- Sequoia Mall master sign program (located on northwest corner of Mooney Boulevard & Caldwell Avenue): Approved with two 20-foot tall pylon structures (78 square feet of sign area per side), and four additional monument signs with 12-foot height and 35 square feet of sign copy per side.

Sign Ordinance Section 17.48.140 allows master sign programs to deviate from the dimensional standards and other limitations of the Sign Ordinance, provided they achieve a result that is superior to what would otherwise be allowed. To determine a superior design the following findings must be made:

1. That the proposed signs are in harmony and visually related to other signs in the master sign program, their respective buildings, and surrounding development; and
2. That the proposed signs will comply with all the provisions of the sign ordinance, except with regard to number of signs allowed and location and height of signs.

Per the elevations in the MSP, the multi-tenant monument signs will conform to the architectural theme of the overall complex that is illustrated in the Carleton Acres Specific Plan, pages 52-55, and to the conceptual locations and designs in pages 108-109.

Staff finds the sign area of the monument signs to be acceptable in this instance and would recommend that such signs be limited to the locations shown on the MSP's site plan. An addition, staff finds that the total sign area for tenant identification (133 square feet between the three signs) is a less cumulative total than if each of the eight parcels fronting Shirk & Riggin were granted their own signs at 35 square feet each (resulting in up to 280 square feet).

Tenant Sign Criteria / Wall Signs

Guidelines and illustrations pertaining to wall sign allotment are shown in the MSP under the General Sign Design Guidelines.

The MSP proposes utilizing the City Sign Ordinance's standard of 2 square feet per 1 lineal foot of building frontage, allowing a maximum sign area of 150 square feet of combined sign area for all signs on a primary frontage.

For anchor retail tenants (specified as tenants over 120,000 square feet), a maximum of 522 square feet of combined sign area for all signs is proposed. This figure is based upon the elevations included at the end of the MSP. The 522 square feet do not include signage on the fueling station and car wash, which are each considered stand-alone standard tenants.

Costco representatives have provided a memorandum (Exhibit "B") explaining the merits for the property to receive additional signage, including but not limited to scaling to provide visibility from Riggin & Shirk (located 575 to 600 feet from frontage), scaling wherein signage represents only 2% of the façade's total surface area, and the signs being cohesive with the building's architectural theme.

Costco's wall signage is planned to be externally-illuminated. In addition, Costco will not have any identification panels on the freestanding signs.

The proposed 522 square feet of signage for the new 159,212 square foot Costco building is broken down as follows:

Sign	Location	Size	Maximum letter height	Area (each)	Total
Costco Wholesale	West & South Elevations	26'-8" x 7'-4"	5'-0"	175 SF x 2	350 SF
Costco Wholesale	SW Canopy	24'-0" x 6'-7"	4'-6"	141 SF	141 SF
Tire Center	S Elevation	17'-4" x 1'-9"	1'-9"	31 SF	31 SF

An analysis of wall signage sizes among the existing Costco and Walmart (Visalia's two largest single retailers) shows that the request for additional identification wall signage exceeds the 395 sq. ft. approved for the existing Costco (which has one less identification wall sign). The request also exceeds the 216 sq. ft. of identification signage approved for Walmart but is below the 592 sq. ft. total building signage, which includes all accessory wall signs (i.e. Grocery, Home & Pharmacy, Lawn & Garden, Auto Center; Online Pickup, etc.)

- Costco Wholesale (Cameron Avenue), 160,000 sq. ft. building – Sign area approved by Specific Plan Amendment No. 2007-11: 395 sq. ft. total.

Costco Wholesale	W Elevation	32'-0" x 8'-10"	6'-0"	252 SF	252 SF
Costco Wholesale	SW Canopy	21'-4" x 5'-11"	4'-0"	112 SF	112 SF
Tire Center	S Elevation	17'-4" x 1'-9"	1'-9"	31 SF	31 SF

- Walmart (Noble Avenue), 178,914 sq. ft. building – Sign area approved by Variance No. 2017-16: 592 sq. ft. total

Walmart	S Elevation	37'-3" x 8'-2"	5'-0"	216 SF	216 SF
Ancillary signage	S Elevation	Six signs total			251 SF
Ancillary signage	N, W, E elevations	Eight signs total			125 SF

Consistent with the City's practice, staff is recommending Condition No. 3, as a recommended condition of approval, to clarify that there shall be no illuminated signs (either internally or externally) on building façades on parcels that are adjacent to residential zoning, including if separated by a local street (i.e. Denton Street). This would include Costco's proposed signage on the car wash building.

Environmental Review

The requested action is considered Categorically Exempt under Sections 15311 of the Guidelines for the Implementation of the California Environmental Quality Act (CEQA). This category exempts the installation of signs (Categorical Exemption No. 2024-38).

RECOMMENDED FINDINGS

1. That the proposed conditional use permit is consistent with the intent and the criteria of the Zoning Ordinance, particularly Section 17.48.140 regarding master sign programs.
2. That the proposed signs are in harmony and visually related to:
   a) *Other Signs Included in the Master Sign Program.* The master sign program utilizes common design elements including materials, letter style, colors, illumination.
   b) *The Buildings They Identify.* The monument signage utilized in the master sign program universally uses stone textured cladding and colored cladding, which will match building materials. The Costco signage will utilize a color scheme that matches trim colors on its own building.
   c) *The Surrounding Development.* The approval of the master sign program does not adversely affect surrounding land uses or obscure adjacent conforming signs. Other commercial shopping centers, such as Packwood Creek, Orchard Walk, and Sequoia Mall, utilize multiple monument signs that exceed height and size to publicize multiple primary tenants and utilize wall signs that exceeds sign ordinance standards to match the scale of the building.
3. That the proposed signs comply with all the provisions of the Sign Ordinance (i.e., Chapter 17.48), excepting number of signs allowed and the location and height of signs.
4. The requested action is considered Categorically Exempt under Sections 15311 of the Guidelines for the Implementation of the California Environmental Quality Act (CEQA). This category exempts the installation of signs (Categorical Exemption No. 2024-38).

RECOMMENDED CONDITIONS OF APPROVAL

1. That all signage depicted inside the boundary lines depicted in Master Sign Program Exhibit "A", Page 4, be developed in substantial compliance with the Master Sign Program attached as Exhibit "A", except as otherwise noted in the following conditions of approval.

2. That any property located within the sign program boundary lines, whether or not owned by the applicant, shall have their signage regulated in accordance with Exhibit “A”.
3. That there shall be no illuminated wall signs (either internally or externally illuminated) on building façades on parcels that are facing residential zoning to the north or east.
4. That no additional freestanding signs shall be permitted within the Master Sign Program area beyond the three freestanding signs shown on the Master Sign Program Exhibit “A”, Page 4.
5. That no electronic or animated display signs are permitted as part of this Master Sign Program.
6. That a sign permit shall be obtained for each wall sign and freestanding sign.
7. The applicant and all successors in interest shall comply with all applicable federal, state and city codes and ordinances.

APPEAL INFORMATION

According to the City of Visalia Zoning Ordinance Section 17.02.145, an appeal to the City Council may be submitted within ten days following the date of a decision by the Planning Commission. An appeal with applicable fees shall be in writing and shall be filed with the City Clerk at 220 N. Santa Fe Street. The appeal shall specify errors or abuses of discretion by the Planning Commission, or decisions not supported by the evidence in the record. The appeal form can be found on the city’s website www.visalia.city or from the City Clerk.

Attachments:

- Related Plans and Policies
- Resolution No. 2024-45 for Conditional Use Permit No. 2024-27
- Exhibit “A” – Master Sign Program
- Exhibit “B” – Memorandum addressing Costco Warehouse Wall Signage
- General Plan Land Use Map
- Zoning Map
- Aerial Map
- Location Map

Related Plans & Policies

General Plan and Zoning: The following General Plan and Zoning Ordinance policies apply to the proposed project:

General Plan Policy

None.

Zoning Ordinance

Chapter 17.38: Conditional Use Permits

17.38.010 Purposes and powers.

In certain zones conditional uses are permitted subject to the granting of a conditional use permit. Because of their unusual characteristics, conditional uses require special consideration so that they may be located properly with respect to the objectives of the zoning ordinance and with respect to their effects on surrounding properties. In order to achieve these purposes and thus give the zone use regulations the flexibility necessary to achieve the objectives of this title, the planning commission is empowered to grant or deny applications for conditional use permits and to impose reasonable conditions upon the granting of such permits. (Prior code § 7525)

17.38.020 Application procedures.

A. Application for a conditional use permit shall be made to the planning commission on a form prescribed by the commission which shall include the following data:

1. Name and address of the applicant;
2. Statement that the applicant is the owner of the property or is the authorized agent of the owner;
3. Address and legal description of the property;
4. The application shall be accompanied by such sketches or drawings as may be necessary by the planning division to clearly show the applicant's proposal;
5. The purposes of the conditional use permit and the general description of the use proposed;
6. Additional information as required by the historic preservation advisory committee.

B. The application shall be accompanied by a fee set by resolution of the city council sufficient to cover the cost of handling the application. (Prior code § 7526)

17.38.030 Lapse of conditional use permit.

A conditional use permit shall lapse and shall become void twenty-four (24) months after the date on which it became effective, unless the conditions of the permit allowed a shorter or greater time limit, or unless prior to the expiration of twenty-four (24) months a building permit is issued by the city and construction is commenced and diligently pursued toward completion on the site which was the subject of the permit. A permit may be renewed for an additional period of one year; provided, that prior to the expiration of twenty-four (24) months from the date the permit originally became effective, an application for renewal is filed with the planning commission. The commission may grant or deny an application for renewal of a conditional use permit. In the case of a planned residential development, the recording of a final map and improvements thereto shall be deemed the same as a building permit in relation to this section. (Ord. 2001-13 § 4 (part), 2001: prior code § 7527)

17.38.040 Revocation.

Upon violation of any applicable provision of this title, or, if granted subject to a condition or conditions, upon failure to comply with the condition or conditions, a conditional use permit shall be suspended automatically. The planning commission shall hold a public hearing within sixty (60) days, in

accordance with the procedure prescribed in Section 17.38.080, and if not satisfied that the regulation, general provision or condition is being complied with, may revoke the permit or take such action as may be necessary to insure compliance with the regulation, general provision or condition. Appeals of the decision of the planning commission may be made to the city council as provided in Section 17.38.120. (Prior code § 7528)

17.38.050 New application.

Following the denial of a conditional use permit application or the revocation of a conditional use permit, no application for a conditional use permit for the same or substantially the same conditional use on the same or substantially the same site shall be filed within one year from the date of denial or revocation of the permit unless such denial was a denial without prejudice by the planning commission or city council. (Prior code § 7530)

17.38.060 Conditional use permit to run with the land.

A conditional use permit granted pursuant to the provisions of this chapter shall run with the land and shall continue to be valid upon a change of ownership of the site or structure which was the subject of the permit application subject to the provisions of Section 17.38.065. (Prior code § 7531)

17.38.065 Abandonment of conditional use permit.

If the use for which a conditional use permit was approved is discontinued for a period of one hundred eighty (180) days, the use shall be considered abandoned and any future use of the site as a conditional use will require the approval of a new conditional use permit.

17.38.070 Temporary uses or structures.

17.38.080 Public hearing--Notice.

A. The planning commission shall hold at least one public hearing on each application for a conditional use permit.

B. Notice of the public hearing shall be given not less than ten days nor more than thirty (30) days prior to the date of the hearing by mailing a notice of the time and place of the hearing to property owners within three hundred (300) feet of the boundaries of the area occupied or to be occupied by the use which is the subject of the hearing, and by publication in a newspaper of general circulation within the city. (Prior code § 7533)

17.38.090 Investigation and report.

The planning staff shall make an investigation of the application and shall prepare a report thereon which shall be submitted to the planning commission. (Prior code § 7534)

17.38.100 Public hearing--Procedure.

At the public hearing the planning commission shall review the application and the statement and drawing submitted therewith and shall receive pertinent evidence concerning the proposed use and the proposed conditions under which it would be operated or maintained, particularly with respect to the findings prescribed in Section 17.38.110. The planning commission may continue a public hearing from time to time as it deems necessary. (Prior code § 7535)

17.38.110 Action by planning commission.

A. The planning commission may grant an application for a conditional use permit as requested or in modified form, if, on the basis of the application and the evidence submitted, the commission makes the following findings:

1. That the proposed location of the conditional use is in accordance with the objectives of the zoning ordinance and the purposes of the zone in which the site is located;

2. That the proposed location of the conditional use and the conditions under which it would be operated or maintained will not be detrimental to the public health, safety or welfare, or materially injurious to properties or improvements in the vicinity.

B. A conditional use permit may be revocable, may be granted for a limited time period, or may be granted subject to such conditions as the commission may prescribe. The commission may grant conditional approval for a permit subject to the effective date of a change of zone or other ordinance amendment.

C. The commission may deny an application for a conditional use permit. (Prior code § 7536)

17.38.120 Appeal to city council.

The decision of the City planning commission on a conditional use permit shall be subject to the appeal provisions of Section 17.02.145. (Prior code § 7537) (Ord. 2006-18 § 6, 2007)

17.38.130 Effective date of conditional use permit.

A conditional use permit shall become effective immediately when granted or affirmed by the council, or upon the sixth working day following the granting of the conditional use permit by the planning commission if no appeal has been filed. (Prior code § 7539)

Chapter 17.48: Signs

17.48.140 Master Sign Program

A. **Purpose.** The purpose of a Master Sign Program is to provide a method for an applicant to integrate the design and placement of signs within a project with the overall design of the development to achieve a more unified appearance. Master Sign Programs may also be used for subdivision projects with a phased development and/or sales plan. Minor variations in dimensional standards and other limitations of this Section may be approved, provided they achieve a result that is superior to what would otherwise be allowed. The Sign Program must demonstrate how it:

1. Improves the safety and welfare of the general public by minimizing distractions, hazards, and obstructions from sign design or placement;

2. Provides for sign design or placement appropriate for the area;

3. Incorporates sign design and placement related to architectural and landscape features on site; and

4. Incorporates sign design, scale, and placement oriented to pedestrian traffic.

B. **Applicability and Approval Required.**

1. ***Master Sign Program Required.*** A Master Sign Program approved by the Planning Commission is required for:

a. New or remodeled non-residential or mixed used projects on sites of five acres or more;

b. Multiple tenant commercial or mixed use buildings where the entire façade is being remodeled; and

c. Any development in the BRP Zone.

2. ***Optional Sign Program.*** A Master Sign Program may be substituted for specific sign designs and individual applications if requested by an applicant and approved by the Planning Commission.

C. **Required Submittals.** Applications for a Master Sign Program must include the following plans and text:

1. A site plan showing the location of buildings, parking lots, driveways and landscaped areas;

2. Computation of the maximum total sign area, the maximum area for individual signs, the height of signs and the number of freestanding signs allowed, if proposed;

3. An accurate indication on the site plan of the proposed location of each proposed sign and existing sign which is to remain;

4. Color schemes, lettering and graphic style (if tenants are not known, generic styles may be presented);

5. Lighting and sign construction materials; and

6. Sign dimensions (if tenants are not known, generic dimensions may be presented); and

7. A written program of standards for all sign types to be distributed to future tenants, including color, size, illumination, construction details, and sign placement.

D. **Findings.** The Planning Commission will only approve a Master Sign Program if the following findings are made:

1. That the proposed signs are in harmony and visually related to:

a. *Other Signs Included in the Master Sign Program.* This may be accomplished by incorporating several common design elements such as materials, letter style, colors, illumination, sign type or sign shape.

b. *The Buildings They Identify.* This may be accomplished by utilizing materials, colors or design motifs included in the building being identified.

c. *The Surrounding Development.* Approval of a planned sign program must not adversely affect surrounding land uses or obscure adjacent conforming signs.

2. That the proposed signs will comply with all the provision of this Section, except with regard to:

a. Number of signs allowed; and

b. Location and height of signs.

E. **Conditions**. Reasonable conditions of approval may be imposed by the Planning Commission to achieve the purposes of this Section and ensure compatibility with adjacent land uses and signage.

F. **Post-Approval Procedures.** After approval of a Master Sign Program, no signs shall be erected, placed, painted, or maintained, except in conformance with such Program, and such Program may be enforced in the same way as any provision in this Section.

1. ***Lease Agreements.*** The Master Sign Program and all conditions of approval shall be attached to the lease agreements for all leasable space within a project.

2. ***Individual Signs***. Any sign that conforms to an approved Master Sign Program may be approved by the City Planner or designee; however, approval of a Master Sign Program does not waive the permit requirements for individual signs.

3. ***Amendments***. The City Planner or designee may approve minor amendments to a Master Sign Program that are in substantial conformance with the original approval. All other amendments, including amendments to conditions of approval shall be processed as a new application.

Environmental Document # 2024-38

NOTICE OF EXEMPTION

City of Visalia
315 E. Acequia Ave.
Visalia, CA 93291

To: County Clerk
County of Tulare
County Civic Center
Visalia, CA 93291-4593

Conditional Use Permit No. 2024-27

PROJECT TITLE

The project site is located at the northeast corner of Shirk Street and Riggin Avenue. (APN: 077-100-108 [portion])

PROJECT LOCATION

Visalia — **PROJECT LOCATION - CITY**

Tulare — **COUNTY**

A request to adopt a master sign program associated with a new commercial center, including the addition of wall mounted signs and monument signs that exceed City standards for height and sign area.

DESCRIPTION - Nature, Purpose, & Beneficiaries of Project

City of Visalia, 315 E. Acequia Avenue, Visalia CA 93291, Email: brandon.smith@visalia.city

NAME OF PUBLIC AGENCY APPROVING PROJECT

West Star Construction, 13837 S. Zediker Avenue, Kingsburg, CA 93631, Email: sandra@crinklaw.com

NAME AND ADDRESS OF APPLICANT CARRYING OUT PROJECT

N/A

NAME AND ADDRESS OF AGENT CARRYING OUT PROJECT

EXEMPT STATUS: (Check one)

- ☐ Ministerial - Section 15073
- ☐ Emergency Project - Section 15071
- ☒ Categorical Exemption - State type and Section number: **Section 15311**
- ☐ Statutory Exemptions- State code number:

This project involves the installation of signs meeting the conditions described in Section 15311.

REASON FOR PROJECT EXEMPTION

Brandon Smith — **CONTACT PERSON**

(559) 713-4636 — **AREA CODE/PHONE**

July 18, 2024 — **DATE**

ENVIRONMENTAL COORDINATOR
Brandon Smith, AICP

RESOLUTION NO. 2024-45

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF VISALIA APPROVING CONDITIONAL USE PERMIT NO. 2024-27: A REQUEST BY WEST STAR CONSTRUCTION, INC. TO ADOPT A MASTER SIGN PROGRAM ASSOCIATED WITH A NEW COMMERCIAL CENTER, INCLUDING THE ADDITION OF WALL MOUNTED SIGNS AND MONUMENT SIGNS THAT EXCEED CITY STANDARDS FOR HEIGHT AND SIGN AREA. THE PROPERTY IS LOCATED WITHIN THE CITY'S COMMERCIAL MIXED USE (C-MU) ZONE DISTRICT. THE PROJECT SITE IS LOCATED AT THE NORTHEAST CORNER OF SHIRK STREET AND RIGGIN AVENUE. (APN: 077-100-108 [PORTION])

WHEREAS, Conditional Use Permit No. 2024-27 is a request by West Star Construction, Inc. to adopt a master sign program associated with a new commercial center, including the addition of wall mounted signs and monument signs that exceed City standards for height and sign area. The property is located within the City's Commercial Mixed Use (C-MU) zone district. The project site is located at the northeast corner of Shirk Street and Riggin Avenue. (APN: 077-100-108 [portion]); and

WHEREAS, the Planning Commission of the City of Visalia, after duly published notice did hold a public hearing before said Commission on July 22, 2024; and

WHEREAS, the Planning Commission of the City of Visalia finds the Conditional Use Permit to be in accordance with Chapter 17.38.110 and Chapter 17.48.140 of the Zoning Ordinance of the City of Visalia based on the evidence contained in the staff report and testimony presented at the public hearing; and

WHEREAS, the Planning Commission of the City of Visalia finds the Conditional Use Permit to be in accordance with the design and standards within the Carleton Acres Specific Plan based on the evidence contained in the staff report and testimony presented at the public hearing; and

WHEREAS, the Planning Commission finds the project to be Categorically Exempt consistent with the California Environmental Quality Act (CEQA) and City of Visalia Environmental Guidelines.

NOW, THEREFORE, BE IT RESOLVED that the project is exempt from further environmental review pursuant to CEQA Section 15311.

NOW, THEREFORE, BE IT FURTHER RESOLVED that the Planning Commission of the City of Visalia makes the following specific findings based on the evidence presented:

1. That the proposed conditional use permit is consistent with the intent and the criteria of the Zoning Ordinance, particularly Section 17.48.140 regarding master sign programs.
2. That the proposed signs are in harmony and visually related to:
   a) *Other Signs Included in the Master Sign Program.* The master sign program utilizes common design elements including materials, letter style, colors, illumination.

b) *The Buildings They Identify.* The monument signage utilized in the master sign program universally uses stone textured cladding and colored cladding, which will match building materials. The Costco signage will utilize a color scheme that matches trim colors on its own building.

c) *The Surrounding Development.* The approval of the master sign program does not adversely affect surrounding land uses or obscure adjacent conforming signs. Other commercial shopping centers, such as Packwood Creek, Orchard Walk, and Sequoia Mall, utilize multiple monument signs that exceed height and size to publicize multiple primary tenants and utilize wall signs that exceeds sign ordinance standards to match the scale of the building.

3. That the proposed signs comply with all the provisions of the Sign Ordinance (i.e., Chapter 17.48), excepting number of signs allowed and the location and height of signs.

4. The requested action is considered Categorically Exempt under Sections 15311 of the Guidelines for the Implementation of the California Environmental Quality Act (CEQA). This category exempts the installation of signs (Categorical Exemption No. 2024-38).

BE IT FURTHER RESOLVED that the Planning Commission hereby approves the Conditional Use Permit on the real property here described in accordance with the terms of this resolution under the provisions of Section 17.38.110 and 17.48.140 of the Ordinance Code of the City of Visalia, subject to the following conditions:

1. That all signage depicted inside the boundary lines depicted in Master Sign Program Exhibit “A”, Page 4, be developed in substantial compliance with the Master Sign Program attached as Exhibit “A”, except as otherwise noted in the following conditions of approval.

2. That any property located within the sign program boundary lines, whether or not owned by the applicant, shall have their signage regulated in accordance with Exhibit “A”.

3. That there shall be no illuminated wall signs (either internally or externally illuminated) on building façades on parcels that are facing residential zoning to the north or east.

4. That no additional freestanding signs shall be permitted within the Master Sign Program area beyond the three freestanding signs shown on the Master Sign Program Exhibit “A”, Page 4.

5. That no electronic or animated display signs are permitted as part of this Master Sign Program.

6. That a sign permit shall be obtained for each wall sign and freestanding sign.

7. The applicant and all successors in interest shall comply with all applicable federal, state and city codes and ordinances.

Carleton Acres Commercial Phase 1
Master Sign Program

R6 - 07.08.24

PROPERTY ADDRESS: NEC of W. Riggin Ave. & N. Shirk St., Visalia, CA
ZONING DESIGNATION: Commercial Mixed Use (C-MU)
APN: By LL

SIGN CONSULTANT
Applied Media Concepts
423 W. Fallbrook Ave. Ste 206
Fresno, CA, 93711
559-728-4228

DEVELOPERS / OWNERS
- The Shannon Family
- West Star Construction, Inc.
- Hayes Ranch LLC

applied media

INDEX

SITE PLAN 2
FREESTANDING SIGNS 3
SIGN CRITERIA 7
RULES OF MEASUREMENTS 12
APPROVED SIGN TYPES 13
COSTCO ELEVATIONS 14

applied media

CLIENT	PROJECT ADDRESS	SALES	DESIGNER
Carleton Acres	NEC of W. Riggin Ave. & N. Shirk St. Visalia, CA	JB	AS

DRAWING DATE: 03.20.24

REVISION	DATE	DESCRIPTION
01 (AS)	04.09.24	UPDATE PER CLIENT REVIEW
02 (AS)	05.13.24	UPDATE PER CLIENT REVIEW
03 (AS)	06.05.24	COPY UPDATES PER CLIENT REVIEW
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06 (AS)	07.05.24	UPDATE PER CITY / CODE REVIEW

APPROVALS

SALES:

CUSTOMER:

LANDLORD:

CONCEPTUAL DRAWINGS ONLY:
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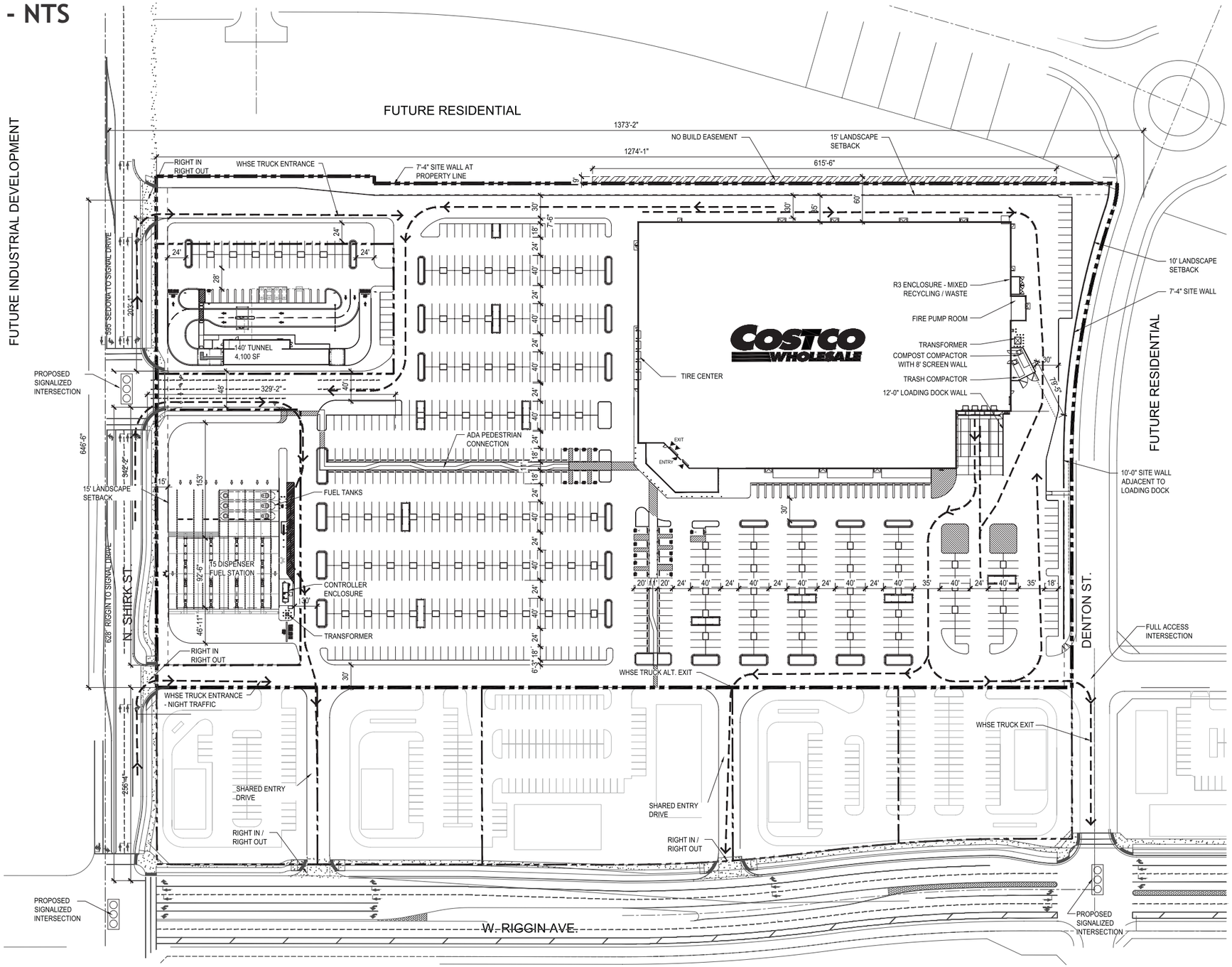
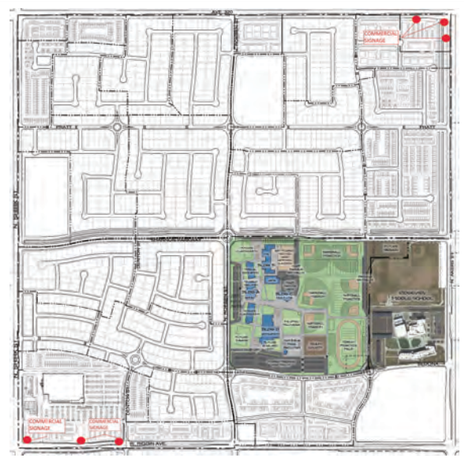
SITE PLAN - NTS



VICINITY MAP



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FREESTANDING SIGNS

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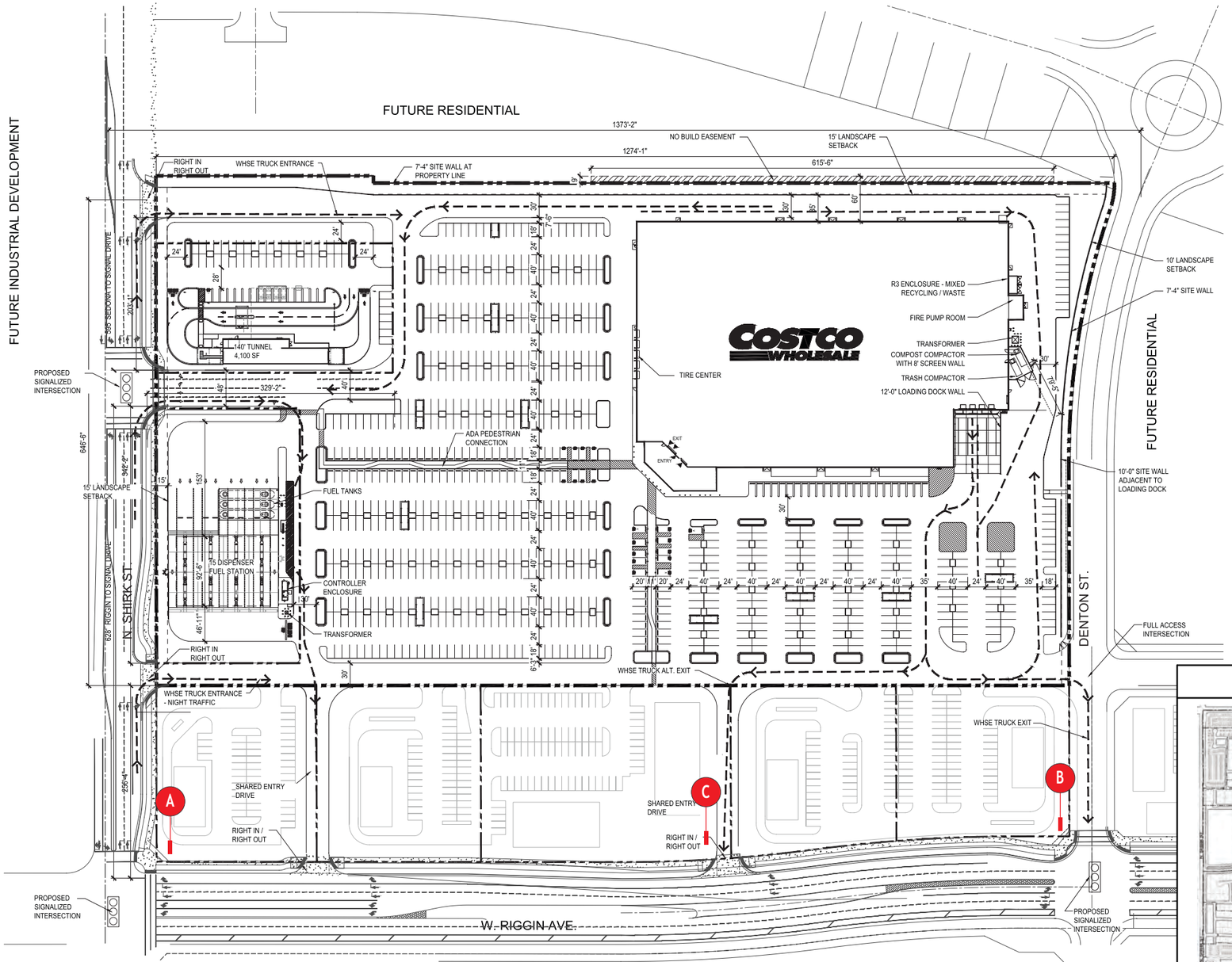
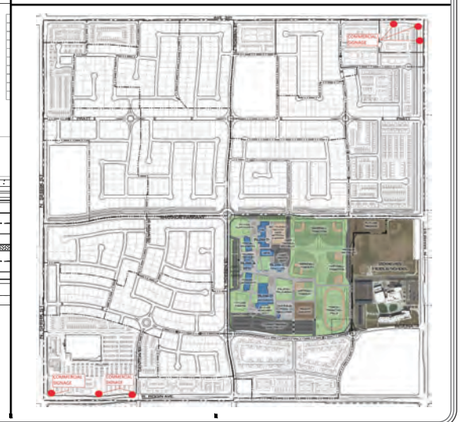


N

VICINITY MAP



SCOPE OF WORK

Sign	Description	Qty
A	TBD FREESTANDING SIGN	1
B	TBD FREESTANDING SIGN	1
C	TBD FREESTANDING SIGN	1

FREESTANDING SIGN CODE:

- Where Allowed. The base of the supporting structure must be setback at least five feet from the street right-of-way.
- Maximum Height: 12ft
- Maximum Area: The sign area must not exceed 49 square feet per side.
- Setback: Freestanding signs may be located within the required setback areas as long as they are a minimum of five feet from the front property line, and 20 feet from any interior side property line.
- Sign Base: Freestanding signs of 12 feet or less shall be mounted on a base, the width of which shall not be less than 50 percent of the width of the widest part of the sign.

applied media

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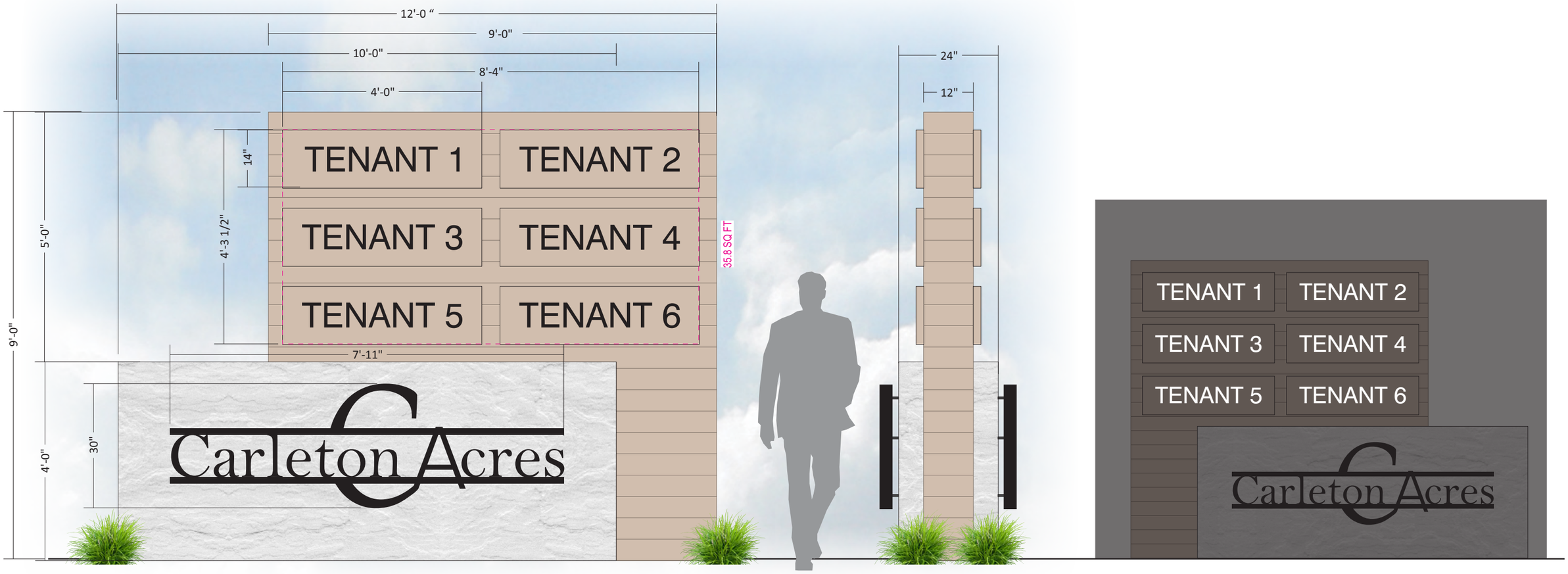
FREESTANDING COMMERCIAL SIGNS - 6 TENANTS



ILLUMINATED VIEW / OPPOSITE SIDE - NTS

C INTERNALLY ILLUMINATED D/F MONUMENT SIGN - QTY 1 — AREA: 35.8 SQ. FT. (MAX ALLOWED: 49 SQ. FT.)

SCALE: 1/2 = 1'-0"

BASE W/ LOGO

1. FABRICATED BASE STRUCTURE W/ F1 FINISH
2. LOGO TO BE HALO-LIT CHANNEL LETTERS PAINTED C1, FASTENED TO BASE W/ CONCEALED FASTENERS & 1 1/2" STANDOFFS
3. ILLUMINATED W/ WHITE LED'S

MONUMENT CABINET

4. FABRICATED MONUMENT CABINET W/ F2 FINISH
5. FABRICATED ALUMINUM TENANT CABINETS PAINTED C1 FASTENED TO MONUMENT W/ HARDWARE\ BEST SUITED FOR CONDITIONS
6. COPY AND GRAPHICS TO BE ROUTED AND BACKED WITH TRANSLUCENT WHITE LEXAN (ARTWORK TBD) W/ C1 PERFORATED VINYL (LIGHTS WHITE AT NIGHT)
7. INTERNALLY ILLUMINATED W/ WHITE LED'S
8. DIRECT BURY FOUNDATION TBC PENDING ENGINEERING REVIEW

NOTES

- PRIMARY ELECTRICAL BY OTHERS

COLORS / FINISHES

- C1 COLOR TBD - (MATCH BUILDING MATERIALS)
- C2 COLOR TBD - (MATCH BUILDING MATERIALS)
- F1 STONE TEXTURED CLADDING / FINISH TBD (MATCH BUILDING MATERIALS)
- F2 CLADDING / FINISH TBD (MATCH BUILDING MATERIALS)

applied media

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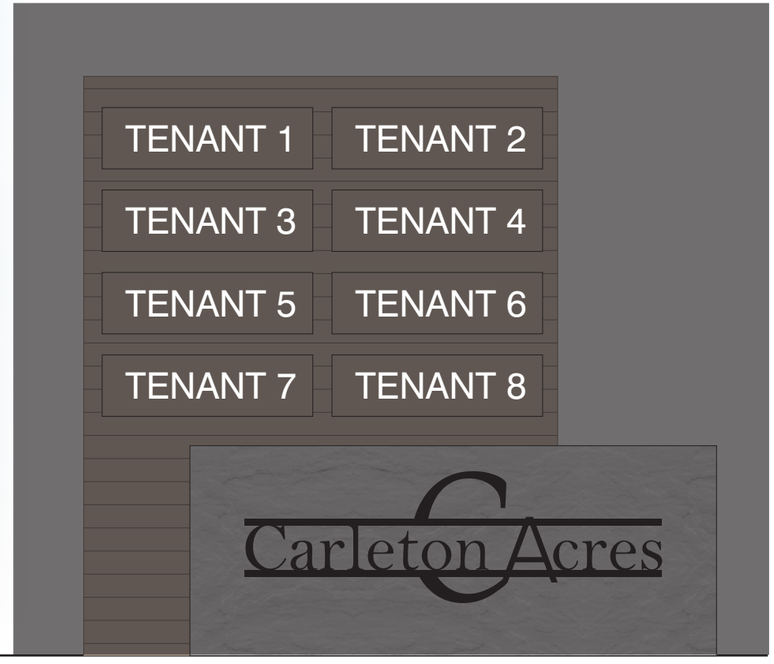
FREESTANDING COMMERCIAL SIGNS - 8 TENANTS





A **B** **INTERNALLY ILLUMINATED D/F MONUMENT SIGN - QTY 2** **AREA: 48.6 SQ. FT. (MAX ALLOWED: 49 SQ. FT.)**

SCALE: 1/2 = 1'-0"

ILLUMINATED VIEW / OPPOSITE SIDE - NTS

BASE W/ LOGO

1. FABRICATED BASE STRUCTURE W/ F1 FINISH
2. LOGO TO BE HALO-LIT CHANNEL LETTERS PAINTED C1, FASTENED TO BASE W/ CONCEALED FASTENERS & 1 1/2" STANDOFFS
3. ILLUMINATED W/ WHITE LED'S

MONUMENT CABINET

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5. FABRICATED ALUMINUM TENANT CABINETS PAINTED C1 FASTENED TO MONUMENT W/ HARDWARE\ BEST SUITED FOR CONDITIONS
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- C1 COLOR TBD - (MATCH BUILDING MATERIALS)
- C2 COLOR TBD - (MATCH BUILDING MATERIALS)
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- F2 CLADDING / FINISH TBD (MATCH BUILDING MATERIALS)

applied media

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Sign Criteria

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Standardized Sign Design Intent

A. Signage Objectives

1. To foster imaginative and creative sign content that is unique, compelling and attractive while complimenting the architecture and building color palate.

2. To generate signage that is an integral design element to the Carleton Acres experience while reflecting the community's design aesthetic and values.

3. To establish aesthetic and practical sign standards in order to facilitate the review process and approval from the landlord and the City of Visalia.

B. Sign Allowances Per Building Designation

Maps are provided to determine Building Type which will designate specific allowances accordingly. Tenants and their employed designers / sign contractors will need to refer to their designated zoning in order to provide sign designs in compliance within those specified allowances.

C. Sign Enforcements for Non-Compliant Tenant SIgns

Landlord reserves the right to remove any signs installed without prior written approval from either the landlord or city. Signs that deviate from landlord or city approved drawing designs are subject to removal as well. Signs that are non-compliant will be removed at tenant's expense including but not limited to disposal, repair and repainting. Any damages to building as a result of non-compliant signage will be the financial responsibility of tenant. Signs must be manufactured and installed by a licensed and bonded sign fabricator. All electrical signs must comply with existing city and state building codes and must meet the standards as outlined by Underwriters Laboratory standard construction mandates. Failure of meeting these code standards may result in sign removal by landlord at tenants expense as well.

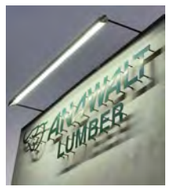
D. Tenant Sign Criteria Agreement

Tenants are subject to the sign criteria is part of the Tenant's Lease Agreement and must comply with these standards as a requirement for leasing retail space.

Allowed Sign Types

Carleton Acres encourages creative, dynamic design and architecturally compatible sign solutions. We want our customers to feel our development adds value to the community and provides a family friendly environment to showcase retailers in the best possible circumstances. Signs should show attention to details and construction with appropriate graphics and colors. Signs should have dimensional elements integral to the design which demonstrates a thoughtful presentation of the business.
Primary signs should be lit either indirectly or internally. Occupants should recognize that not all sign types are appropriate for all building designs and should endeavor to use a single sign type per installation. Proposals utilizing multiple sign types and/or illumination methods will be considered on a case by case basis. All signs will be reviewed for creativity in color and design, compatibility with the building architecture, and compliance with this MSP.

Wall Signs

Sign Type	Description	Rendering	Example Photos
Face Lit Letters	Individual letters, fabricated aluminum, pan channel construction with acrylic faces. Faces may have colored acrylic or vinyl film overlays. Internal illumination to be provided by LEDs or neon. Raceways or wireways are encouraged to minimize penetrations into the builidng. Letters may have shaped F.C.O. background if it is an integral part of logo or provides contextual background to sign. Letters are to be flush against fascia. Exposed conduit or electrical is not allowed.		 
Halo Lit Letters	Individual letters, fabricated aluminum, reverse pan channel construction with clear Lexan backs for weather-proofing. Internal illumination to be provided by LEDs or neon. Halo effect may be White or colored at tenant's discretion. Raceways or wireways are encouraged to minimize penetrations into the builidng. Letters may have shaped F.C.O. background if it is an integral part of logo or provides contextual background to sign. Letters to be pegged off of fascia or backer panel 1-1/2". Exposed conduit or electrical is not allowed.		
Externally Illuminated Signage	Signs illuminated by external lighting in the form of a light bar, straight arm fixtures or gooseneck lamps (as approved by LL). Lighting must only be directed at the signage and visible components must compliment building color and architectural elements. Exposed conduit or electrical is not allowed.		 

NOTE: Signage that varies from the approved 3 types shown in the criteria will be considered by the Landlord or Architectural Review Board (ARB), and can be installed only with Landlord (for tenant signs) and City of Visalia approval (for all signs).

Freestanding Signs

1. Carleton Acres is permitted
   - Maximum height: 12ft
   - Maximum Area: The sign area must not exceed 49 square feet per side.
   - Setback: Freestanding signs may be located within the required setback areas as long as they are a minimum of five feet from the front property line, and 20 feet from any interior side property line.
   - Sign Base: Freestanding signs of 12 feet or less shall be mounted on a base, the width of which shall not be less than 50 percent of the width of the widest part of the sign.

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Ancillary Signs

Ancillary signs are signing opportunities which are not considered as part of the allowable sign area calculations. These signs are considered subordinate to the main sign and are generally at retail entrance eye level.

1. **Illuminated OPEN Signs**
   Illuminated OPEN signs are not required, but are allowed as an option for retail tenants. Sign must be placed near or above entrance. Neon or LED signs are allowed, but must not flash. Cords must terminate in ceiling and must not be visible from outside.

2. **Permanent Window Graphics**
   Window Graphics may not occupy more than 25% of the total window area and must be permanent, applied second surface to tenant window. Graphics must be professionally designed and installed by licensed sign contractor. Permanent window designs must be submitted to landlord as a document drawing with all dimensions specified along with materials used for approval. Materials may be permanent sign paint, gold leaf and vinyl film. Window glass may also be decoratively etched.

3. **Professionally Printed Temporary Window Graphics**
   Temporary window graphics are permitted only if they are professionally printed window graphics that do not obscure more than 25% of the total window area. Graphics must be printed, "cling" style vinyl film. Faded or inappropriate graphics are subject to removal by order of landlord. Shall not be displayed for more than 30 consecutive days, or 60 total days in a calendar year.

4. **Door / Sidelight Operational Graphics**
   All tenants must provided hours of operation either on the door or sidelight window adjacent to doors. Hours to be minimum 3/4" individual letters/numerals graphic vinyl film overlays on windows. Tenants may also display business name or logo on doors or sidelights which may be either vinyl film overlays or professionally applied gold leaf graphics. Tenant may also display as secondary copy on either door or sidelights credit card information or security systems employed.

5. **Painted "Sales" or "Specials" Graphics on Windows**
   Hand-painted, temporary looking graphics on windows for sales, seasonal sales or special promotions must be submitted to the landlord for approval prior to installation, shall not exceed 25% of the total window area, and shall not be displayed for more than 30 consecutive days.

6. **Directional and Drive-Thru Lane Menu Board Signs**
   Temporary signage to follow City of Visalia standards. Directional and Drive-Thru Lane Menu Board signs to be approved by Carleton Acres Architectural Review Board.

General Sign Design Guidelines

These guidelines are to help determine appropriate sign solutions for business as well as provide a general outline of how to get the sign approval process started.

Sign Design / Placement

1. Signs may be centered over entrance doors, on building frontage (including rear) or where the building architecture creates a logical area for sign placement. Endcap tenants or Pad and Anchor Retail Tenants may also be allowed a sign on each elevation, provided they do not exceed square footage allotment of 2 square feet of signage per 1 lineal foot of frontage for that respective elevation. This will include the North, East, South and West frontages;
   - Anchor Retail Tenants (Occupant space greater than 120,000 square feet): Up to **522** square feet of sign area, whichever is less, per tenant.
   - Standard Tenants: Up to **150** square feet of sign area, whichever is less, per tenant.

2. All sign concepts / logos are to be generated from "camera-ready" electronic, vector artwork by a professional designer or sign contractor and submitted for written approval prior to conceptual sign design work is implemented. Signs should strive to incorporate creative design / construction and innovative sign solutions are encouraged.

3. All signs should fit in allotted fascia/wall area with plenty of visual open space between sign and edges or architectural breaks. Signs should be visually balanced and scaled to the building architecture.

4. Dimensional letters and signs should have hidden attachment to building fascia unless attachment is part of the design element (in which case, will require special design approval.

5. In general, trim caps should match returns and be of a dark color complimentary to the building architecture. Signs proposed with trim caps that match the face, or any color other than the color of the returns, will be considered on a case by case basis (especially in situations where corporate logos and standards should be considered).

6. Mixing sign types and illumination methods is allowed with written approval.

Type styles

1. Type styles are at an occupant's discretion and if an occupant has an established logo design with custom fonts, they may use them accordingly. Fonts may be serif or sans serif or script style and may be a modified style as well. Upper and lower case characters with ascenders and descenders are allowed and may be arranged in multiple lines in tenant sign space and sign square footage allows.

Lighting

1. Letters and logos may transmit light. Backgrounds may be illuminated indirectly either through reverse pan channel, halo illuminated letters.

2. All illuminated Tenant signs are to be controlled by a timer as required by landlord

3. Exposed sign lighting fixtures to compliment sign and architecture of tenant building space. All Tenant fixtures along with photometrics, design and finishes to be approved by landlord.

4. All raceway or wireways to be concealed behind letters and painted to match existing wall surfaces. No exposed conduit or electrical wiring to be exposed.

Colors

1. Colors of individual letters to contrast with background wall/fascia. Letters/logo should be legible both in daytime as well as night.

2. Creativity in color and design is encouraged but unconventional color schemes or colors that might clash with fascia color must be approved by landlord prior to Tenant sign design submittal. For example, fluorescent and DayGlo colors are strongly discouraged as they are typically not compatible with the building architecture.

Definitions

The following words and phrases, whenever used in this section, shall have the meaning defined in this subsection unless the context clearly requires otherwise.
SIGNS AND SIGNAGE: Any words, lettering, figures, numerals, or images, which advertise, promote, or convey information about any business, product, activity, or interest.
WINDOW: Any opening in the wall of a building that is fitted with glass or other transparent material.

TENANT: Any parcel or building other than Anchor Tenant and where landlord is the lessee

ANCHOR RETAIL: Parcels and buildings on which will be located a Costco warehouse and its ancillary car wash and fuel facility buildings; provisions within this plan that refer to Tenants or Tenant signs do not apply to Anchor Retail

Materials

It cannot be stressed more the importance of quality materials with refined finishing to foster a professional image for tenant signs as well as Carleton Acres's retail shopping experience. Here is a list of acceptable sign construction materials, but this list is for a starting reference only. Newer materials may become available or materials not commonly associated with sign construction may be acceptable, but would require further clarification for landlord approval:

1. Dimensional geometric shapes with either painted coatings or burnished finishes.

finishes.

applied media

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03 (AS)	06.05.24	COPY UPDATES PER CLIENT REVIEW
04 (AS)	06.06.24	UPDATE W/ REVISED COSTCO ELEVATIONS
05 (AS)	06.10.24	COPY UPDATES PER CLIENT REVIEW
06 (AS)	07.05.24	UPDATE PER CITY / CODE REVIEW

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2. Automotive/industrial grade paints in either polished, satin or matte

3. Metal screens, grids or mesh backgrounds to add shadowing interest.

4. Etched or brushed metal finishes.

5. Cut, fabricated or abraded steel and aluminum with finished edges.

6. Acrylic and Lexan in white, colored, clear and transparent finishes with or without vinyl film decoration.

7. Acrylic and Lexan in white, colored, clear and transparent finishes with or without vinyl film decoration.

8. Vinyl film overlays. Vinyl film may be matte, gloss or satin finish in black, white, clear or colored finishes. Films may be digitally printed with U.V. laminate film overlay. Outdoor life rating of films must be at least 3 years and manufacturer must be specified in design approval drawings.

9. Wood with weather protective coating.

Exterior Signage Restrictions

1. No more than fifteen percent (15%) of the square footage of each window and clear door that is visible to the public from a public thoroughfare, sidewalk, or parking lot of any retail store shall bear signs.

2. The area covered by a sign is calculated using the perimeter of the sign and includes any clear areas or spaces within the sign, such as the clear areas within a neon sign. For irregularly shapes signs, the area is that of the smallest rectangle that wholly contains the sign.

3. For purposes of the section, signs that are not physically attached to the windows or clear doors but that are visible from the exterior of the building in the same manner as if they were physically attaches to the window or clear doors shall constitute a sign subject to subsection 1 of this section.

4. All signs shall be places and maintained is a manner that ensures that law enforcement personnel have a clear and unobstructed view of the interior of the premises, including the area where the cash registers are maintained, from the exterior public sidewalks, parking lots, or entrance to the premises. No sign shall be placed on or visible through the bottom one-third (1/3) of any window.

Tenant Construction Requirements

These requirements are non-negotiable and are part of the lease agreement between Tenants and the Landlord. Violation of the requirements may rescind or revoke Tenant Lease by Landlord.

General

1. Accordance and acceptance of provisions set forth in these sign criteria as well as all other applicable local and state codes, ordinances and laws.

2. All signs must meet all minimum standards and design criteria as outlined by Carleton Acres Sign Criteria and its managing partners and must be approved in writing by the landlord prior to permit submittal. Failure to do so will result in non-compliant or non-approved signs to be removed at tenant's expense. Any repair to damage of building structure by sign removal will be the financial responsibility of Tenant.

3. It is the tenant or the agent working on behalf of the tenant's responsibility to secure all permits for construction and installation of all sign work. The landlord accepts no responsibility for the sign's compliance to local or state building codes or ordinances, nor accepts any responsibility for the safety and maintenance of the tenant's sign. Any fines or penalties incurred by tenant for non-compliance with local and state building codes or ordinance is the sole legal and financial responsibility of the tenant. The landlord has sole compliance control over the aesthetics and intent of tenant signage as outlined in the Carleton Acres Shopping Center Sign Criteria.

Fabrication / Installation Requirements

1. Sign construction and fabrication will be held to highest industry standards in terms of finish and workmanship. All graphics including logo and typography shall be accurately reproduced as indicated in the landlord approved, scaled drawings. Landlord reserves the right to reject any sign work that is inferior in workmanship, finish or operation.

2. Sign design shall be executed by a professional graphics designer and reproduced in a vector file format for accurate manufacturing. Sign fabricator shall be a state licensed sign contractor. Installation shall be executed by either a state licensed sign contractor with a commercial electrical license or a building contractor with an electrical license.

3. Construction shall be made of durable materials with either corrosion resistant properties or paint / coating that are resistant to oxidation and corrosion. Exact materials and colors shall be specified in construction drawings submitted to landlord for approval.

4. Metal letters with non-illuminated, reverse pan channel construction shall have full welds or soldered seams with all joints finished smooth with no visible gaps.

5. Ferrous to non-ferrous metal contacts to be separated with non-conductive gaskets to prevent electrolysis between contacting surfaces. Additionally, stainless steel fasteners are to be used to secure ferrous to non-ferrous metals.

6. All paints and finishes to be provided as physical samples to landlord for approval prior to manufacturing. Only automotive grade or commercial grade paint receptive to exterior metal surfaces shall be used. No painting on site will be accepted for sign work except for touch-up detailing. Paints are required to be formulated for exterior use. Powder coating is also an acceptable method, but also requires a physical tile sample for landlord approval.

7. Exposed fasteners shall be countersunk with flatheads to minimize visibility. All fastener heads to be painted to match adjacent surface.

8. Metal surfaces shall be uniform in appearance. Flat surfaces shall not exhibit oil-canning or show signs of warping. Paint surfaces with orange-peeling, dust, drips or runs will be rejected for repainting. All painted surfaces shall conform to the highest industry standards.

9. All lighting shall match the exact specifications as approved on construction drawings. Any deviation or changes must be made in arrangement and approval by landlord prior to installation.

10. Weep holes on bottom will be required for all illuminated sign work including cabinets and letters. Holes must not be too large to show significant light leakage or must be baffled.

11. Uniform illumination of letter forms and cabinets will be required. Sign faces to show uniform illumination and brightness for all copy and logos. Halo illumination should be uniform with no gapping as is problematic with LED lighting without diffusion.

12. All conduit, cross-overs, J-boxes, wiring, ballast boxes, transformers, disconnect switches and other related hardware required for electrical hook-up for signs shall be concealed. Fasteners and clips to have minimal exposed so as to not be visible from street or normal pedestrian level angles and must be painted to match existing surfaces. Carbon-bearing steel or signs with ferrous metals in construction, must have those surfaces weather-treated with appropriate paint or powder coating. Unpainted black iron material is not permitted.

13. Fabrication/construction of electrical signs and installation of electrical signs shall comply with UBC, NEC and local/state electrical codes. Signs shall be manufactured with U.L. approved and registered sign vendors. All electrical fixtures, including signs shall have registered U.L. compliance labels affixed to surface of sign.

14. All penetration into building walls for electrical or sign fasteners shall be made waterproof and warrantied as such by sign contractor or building contractor executing the installation of sign.

15. Exact locations of signs are to be indicated on building elevation drawing which are to be submitted to landlord for approval. Where applicable, placement should show exact reference measurements of sign location in order to assess wall accessibility, structural

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obstructions or other special circumstances which might hinder or prevent sign installation.

16. Manufacturer's label shall be in an inconspicuous location, not easily visible from normal pedestrian level angle.

Maintenance Requirements

1. Tenant shall maintain all signs in first class condition, operating order and repair at all times. If tenant fails to repair any of its signs or installs any signs in violation hereof for three (3) consecutive business days following Notice from the Landlord, Landlord may make such repairs at Tenant's sole cost and expense.

Sign Size & Quantities

General

Businesses are allotted signs as per classification of their leased building space. Signs are also restricted in size according to their sign area as a ratio of building frontage.

Tenant Signs

Quantity:

No limit, must not exceed allowed square footage.

Sign Area:

2 square feet of sign area permitted for each foot of linear occupancy frontage.

- Anchor Retail: Up to **522** square feet of sign area, whichever is less, per tenant.
- Standard Tenants: Up to **150** square feet of sign area, whichever is less, per tenant.

Logo and Letter Size Restrictions:
80% of vertical fascia height.

Calculation for Square Footage

In a Commercial Zone:
All signs are further restricted by area as defined as a square footage allotment based upon a ratio of (2) square feet per lineal foot of building frontage (up to a maximum of 522 sq. ft. for anchor retail and a maximum of 150 sq. ft. for standard tenants) adjacent to a street, parking area or access drive for that respective elevation. Calculation is based upon the total length of each line of letters within a bounding box (logos may be calculated as a separate item within a bounding box). Logo calculations are based upon the area of graphics within a bounding box. Cabinet sign calculations are based on copy height times copy width inside cabinet box. Letters, logos and cabinets must not exceed horizontal and vertical sign size restrictions as noted in Visual Open Space Restrictions.

Visual Open Space Restrictions for Tenant Signs

In order to preserve proper visual appearance of signage on tenant buildings, we require that overall sign height and width does not exceed 80% of the horizontal fascia open area nor 80% of the vertical fascia open area. Landlord reserves the right to adjust these percentages higher or lower depending on specific architectural considerations.

Tenant Signage Approval Process

Artwork- Logos & Typography

1. Sign artwork to be generated as electronic, vector file format by a professional graphic designer or sign company. Artwork to be converted into PDF format for approval by landlord before proceeding with sign conceptuals for tenant space.

Sign Concept Drawing Submittal

1. Upon approval of initial sign design by landlord, electronic copies of complete drawings are to be submitted to landlord for approval. Incomplete drawings will be rejected. All submitted drawing sign packages should contain:

   A. Fully dimensioned drawings of sign along with side view. Materials (including specific manufacturers if proprietary), colors (including Manufacturer and exact color specifications or labeling), lighting specification with color specifications if necessary, attachment method details with exact specifications for fastener type and quantity, and dimensioned section details with additional information regarding metal thickness, points of attachment and electrical diagram with loads specified. Drawings should be in color on 11" x 17" minimum sheet size.

   B. Fully dimensioned drawings of tenant building elevation(s). Sign should be shown in scale with building elevation drawings indicating exact placement with dimensioned offsets from architectural features indicated for each sign.

   C. Sample color boards on painted on exact material using same paint and finish as final sign product. Samples of sign face including acrylic example and vinyl film colors will also be required. Landlord will retain these samples for reference to final sign product.

2. Drawing submitted shall be reviewed by landlord for conformance to sign criteria as outlined. Landlord shall respond within (15) working days upon receipt of drawings with either a signed approval or rejection notice of submitted plans. Rejected plans will be redlined with indications of modifications or clarifications as needed to obtain approval by landlord. Landlord reserves right and discretion for approval or denial of submitted sign drawings. Tenant must resubmit drawings until landlord deems the design acceptable and the sign package detailing is deemed complete. Tenant must have written landlord approval before proceeding forward with permitting process.

3. Following landlord's approval of sign package drawings, tenant or his agent shall submit drawings signed by landlord to the City of Visalia for sign construction and installation permits, including but not limited to Planning Review and Building approvals. Additional information may be required as part of the drawing package in order for the tenant to secure permits. Tenant shall comply with the City of Visalia to modify drawings accordingly at tenant's own expense until permit(s) is issued. Once tenant or his agent has secured permits for sign work, copies must be delivered to landlord as proof of compliance prior to installation.
   NOTE: While Conditionally Allowed Sign Types may be approved by the landlord, Tenant must submit the proposed design to the City for review by planning and building staff, the sign subcommittee, and the Design Review Committee.

4. Signs shall be inspected upon installation by landlord or landlord's representation to assure compliance with sign criteria and for quality control. Any work out of compliance or deemed unacceptable for workmanship shall be repaired/replaced at tenant's expense. Landlord will furnish tenant with a punch-list of non-compliance issues which will require corrective action. Any corrections must be completed within (15) working days unless arrangements have been made in writing with landlord for any extensions of corrective work.

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AREA

Overall sign area is defined as a single or split area enclosed by a continuous or split line composed of 90 degree angles not to exceed (4) breaks. Any trim, backing, frame, structure and or element used to differentiate the sign from its background will be included in the calculation of allowable square footage.

Allowed Sign Area Split
(4 Total 90 Degree Breaks)



Tenant to Determine Logo & Copy Color along with shapes as per their Nationally Recognized Trademarks.

Descending letter elements in certain fonts such as letters f, g, j, p, q, y & z will not count against allowable copy height and square footage as long as it does not serve as a logo element and/or has been changed from the intended font.

Allowed Sign Area (Copy Logo)



Descending letter logo elements changed from the intended font will be included with the allowable copy height and square footage.

Irregular shaped icons & logos should be considered in sign design for increased visual impact.











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REVISION	DATE	DESCRIPTION
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03 (AS)	06.05.24	COPY UPDATES PER CLIENT REVIEW
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APPROVED SIGN TYPES

- Face-illuminated channel letters
- Halo-illuminated reverse channel letters

MAXIMUM WIDTH OF SIGN NOT TO EXCEED 80% OF TENANTS LEASED LINEAL FRONTAGE

TBD

LOGO AREA

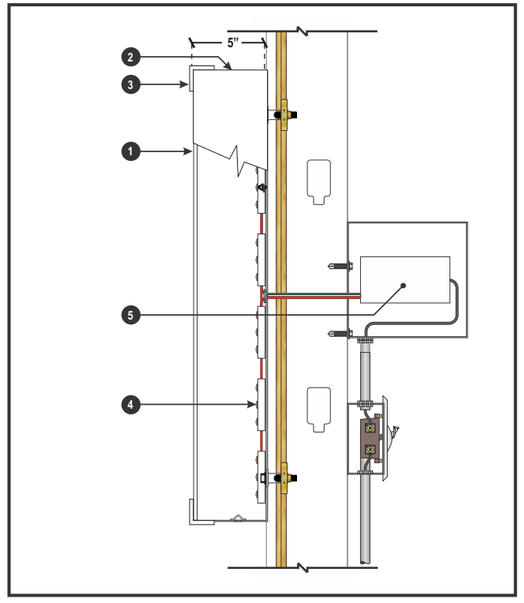
TENANT NAME

FACE-LIT BUILDING SIGN SPECIFICATIONS — Scale: 1/4” = 1’-0”

Description	Specification/Material	Finish	Color
1. Faces	3/16” Acrylic	Vinyl applied 1st surface	Per tenant specifications
2. Returns	.063 Aluminum	Paint (satin)	Per tenant specifications
3 Trimcaps	3/4” Trimcaps	Paint (satin)	Per tenant specifications
4. Illumination	LED	N/A	Per tenant specifications
5. Power Supply w/ Disconnect	Commercial Grade	N/A	N/A

NOTES:

* Tenant artwork must be produced by a graphic designer or other sign professional.



Face-Lit LED Channel Letters Section



Daytime Simulation



Nighttime Simulation

MAXIMUM WIDTH OF SIGN NOT TO EXCEED 80% OF TENANTS LEASED LINEAL FRONTAGE

TBD

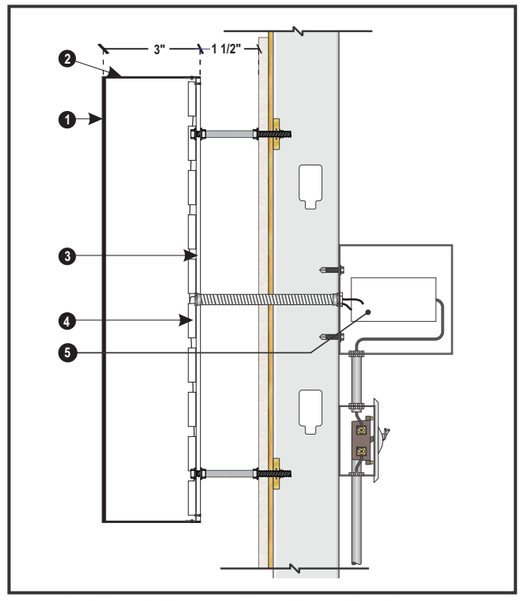
TENANT NAME

HALO-LIT BUILDING SIGN SPECIFICATIONS

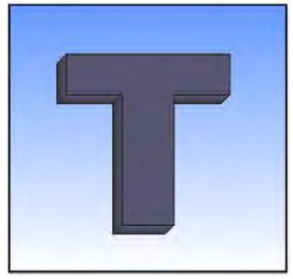
Description	Specification/Material	Finish	Color
1. Faces	.080 Aluminum	Paint (satin)	Per tenant specifications
2. Returns	.063 Aluminum	Paint (satin)	Per tenant specifications
3. Backs	3/16” Clear acrylic	N/A	Clear
4. Illumination	LED	N/A	Per tenant specifications
5. Power Supply w/ Disconnect	Commercial Grade	N/A	N/A

NOTES:

* Tenant artwork must be produced by a graphic designer or other sign professional.



Halo-Lit LED Channel Letters Section



Daytime Simulation



Nighttime Simulation

applied media

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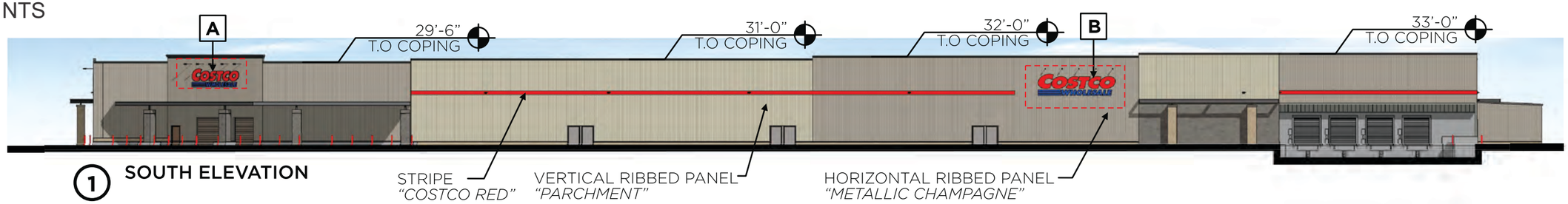
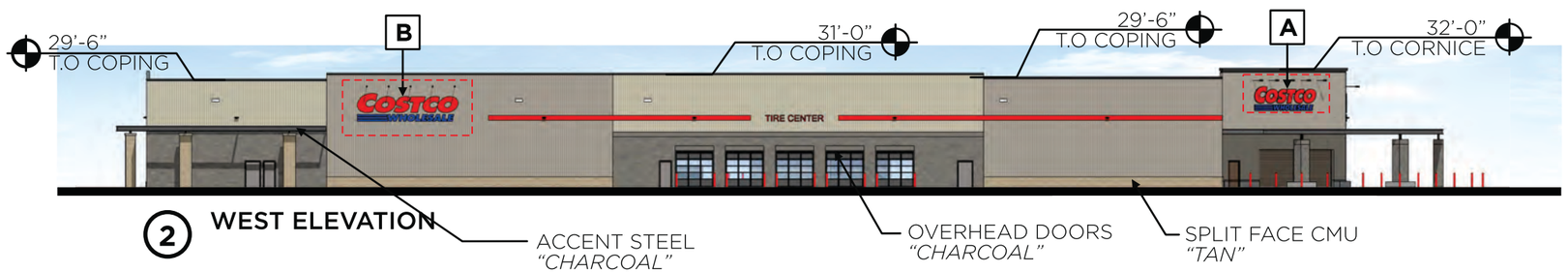
ANCHOR RETAIL - MAIN BUILDING ELEVATIONS

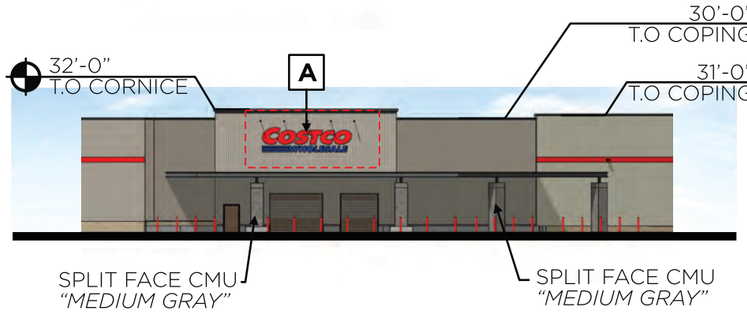
SCALE: NTS



1 SOUTH ELEVATION

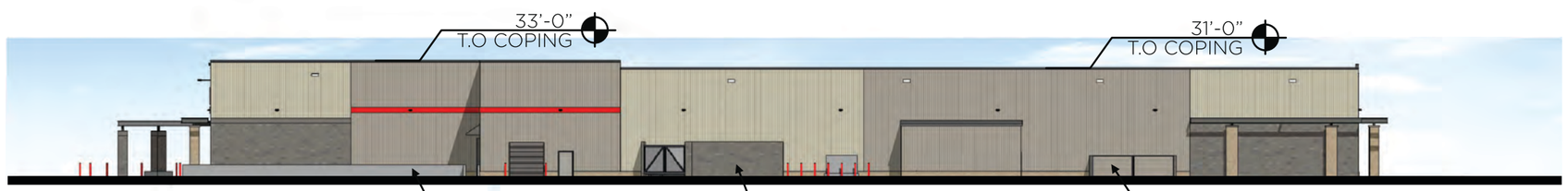


2 WEST ELEVATION





3 NORTH ELEVATION



4 EAST ELEVATION



5 SIGN PACKAGE

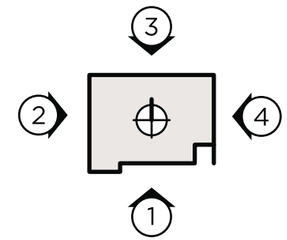
Square Footage Allowed:

2 square feet of sign area permitted for each foot of linear occupancy frontage.

- Major Anchor Tenants (tenant space greater than 120,000 square feet): Up to **522** square feet of sign area, whichever is less, per tenant.
- Standard Tenants: Up to **150** square feet of sign area, whichever is less, per tenant.

SIGN TABLE

IDENTITY	*QUANTITY*	*SIGN*	*SIZE*	*AREA (EACH)*	*TOTAL SF*
A	1	COSTCO WHOLESALE	4'-6" C	141 SF	***141 SF***
B	2	COSTCO WHOLESALE	5'-0" C	175 SF	***350 SF***
C	1	TIRE CENTER	17'4" X 1'9"	31 SF	***31 SF***
			TOTAL SIGN AREA:		**522 SF**



applied media

CLIENT	PROJECT ADDRESS	SALES	DESIGNER
Carleton Acres	NEC of W. Riggin Ave. & N. Shirk St. Visalia, CA	JB	AS
		DRAWING DATE	
		03.20.24	

REVISION	DATE	DESCRIPTION
01 (AS)	04.09.24	UPDATE PER CLIENT REVIEW
02 (AS)	05.13.24	UPDATE PER CLIENT REVIEW
03 (AS)	06.05.24	COPY UPDATES PER CLIENT REVIEW
04 (AS)	06.06.24	UPDATE W/ REVISED COSTCO ELEVATIONS
05 (AS)	06.10.24	COPY UPDATES PER CLIENT REVIEW
06 (AS)	07.05.24	UPDATE PER CITY / CODE REVIEW

APPROVALS

SALES:

CUSTOMER:

LANDLORD:

CONCEPTUAL DRAWINGS ONLY:
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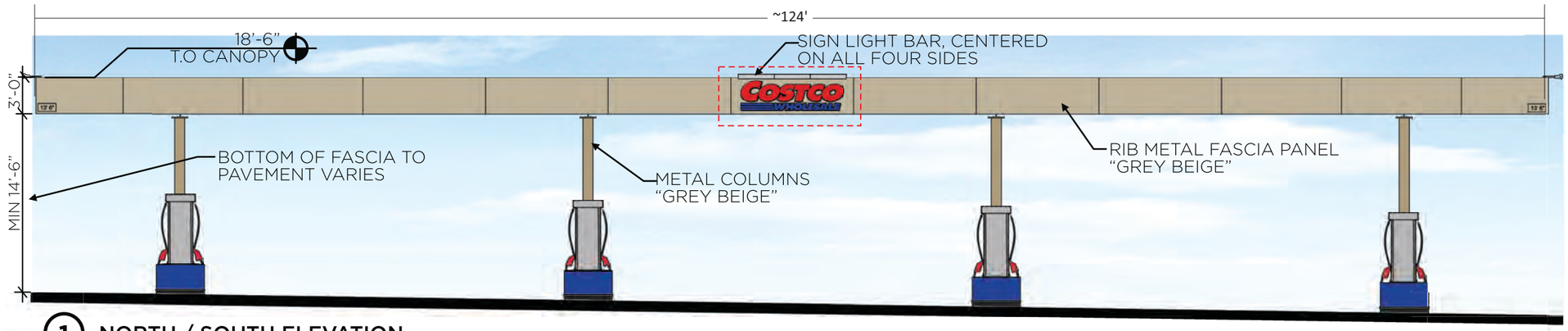
ANCHOR RETAIL - FUEL CANOPY / CONTROLLER ENCLOSURE ELEVATIONS

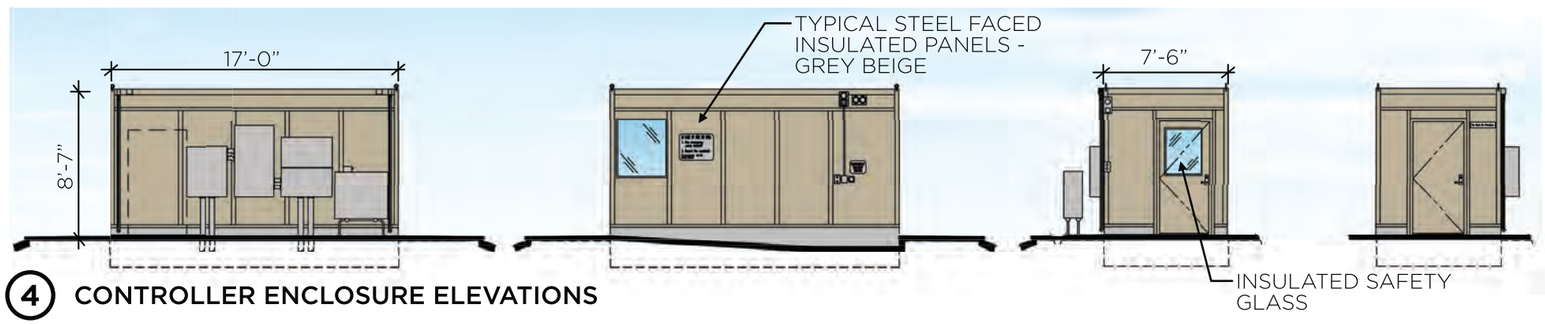
SCALE: NTS



1 NORTH / SOUTH ELEVATION



2 EAST / WEST ELEVATION



4 CONTROLLER ENCLOSURE ELEVATIONS

Square Footage Allowed:

2 square feet of sign area permitted for each foot of linear occupancy frontage.

- Major Anchor Tenants (tenant space greater than 120,000 square feet): Up to **522** square feet of sign area, whichever is less, per tenant.
- Standard Tenants: Up to **150** square feet of sign area, whichever is less, per tenant.

SIGNAGE AREA TABULATION (CANOPY SIGNS)				
QTY	SIGN	SIZE	AREA (SF) EA	TOTAL SF
4	COSTCO WHOLESALE	2'-5 1/4" "C"	21 SF	84 SF
			TOTAL SIGNAGE AREA	84 SF



5 CANOPY SIGNS
SCALE: 1/4" = 1'-0"

applied media

CLIENT	PROJECT ADDRESS	SALES	DESIGNER
Carleton Acres	NEC of W. Riggin Ave. & N. Shirk St. Visalia, CA	JB	AS
		DRAWING DATE	
		03.20.24	

REVISION	DATE	DESCRIPTION
01 (AS)	04.09.24	UPDATE PER CLIENT REVIEW
02 (AS)	05.13.24	UPDATE PER CLIENT REVIEW
03 (AS)	06.05.24	COPY UPDATES PER CLIENT REVIEW
04 (AS)	06.06.24	UPDATE W/ REVISED COSTCO ELEVATIONS
05 (AS)	06.10.24	COPY UPDATES PER CLIENT REVIEW
06 (AS)	07.05.24	UPDATE PER CITY / CODE REVIEW

APPROVALS

SALES:

CUSTOMER:

LANDLORD:

CONCEPTUAL DRAWINGS ONLY:
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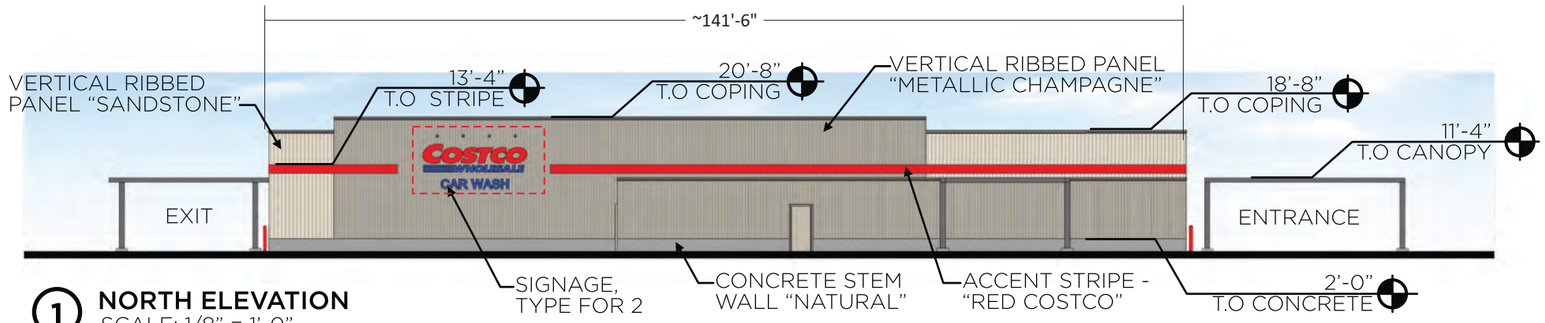
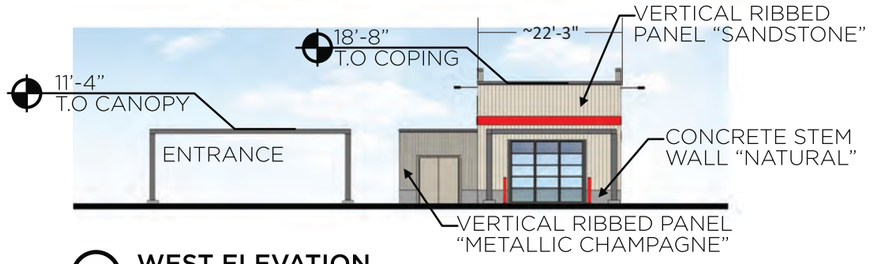
ANCHOR RETAIL - CAR WASH ELEVATIONS

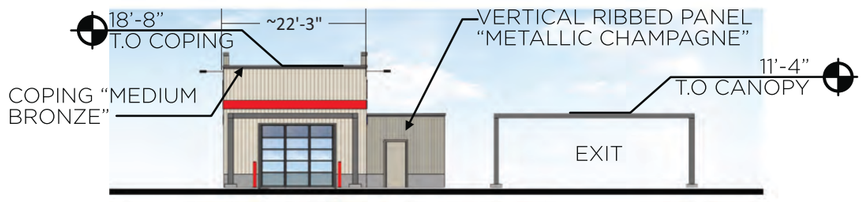
SCALE: NTS



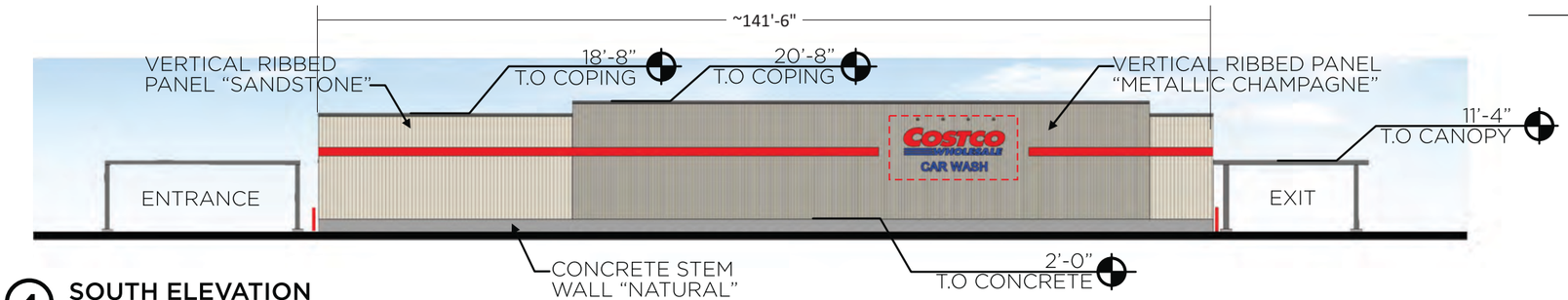
1 NORTH ELEVATION
SCALE: 1/8" = 1'-0"



2 WEST ELEVATION
SCALE: 1/8" = 1'-0"



3 EAST ELEVATION
SCALE: 1/8" = 1'-0"



4 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"

Square Footage Allowed:

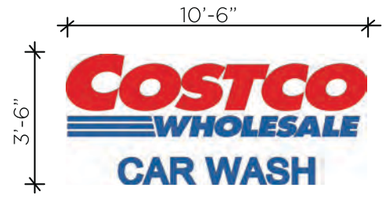
2 square feet of sign area permitted for each foot of linear occupancy frontage.

- Major Anchor Tenants (tenant space greater than 120,000 square feet): Up to **522** square feet of sign area, whichever is less, per tenant.
- Standard Tenants: Up to **150** square feet of sign area, whichever is less, per tenant.

SIGN TABLE

QUANTITY	*SIGN*	*SIZE*	*AREA (EACH)*	*TOTAL SF*
2	COSTCO WHOLESALE	3'-6" x 10'-6"	37 SF	***74 SF***

TOTAL SIGN AREA: **74 SF**



5 SIGNS
SCALE: 1/4" = 1'-0"

applied media

CLIENT	PROJECT ADDRESS	SALES	DESIGNER
Carleton Acres	NEC of W. Riggin Ave. & N. Shirk St. Visalia, CA	JB	AS
		DRAWING DATE	
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APPROVALS

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MEMORANDUM

To: Brandon Smith, AICP

From: Justin Becker and Rita Garcia

Date: July 3, 2024

Subject: Costco Warehouse North Visalia Project ("Project") – Warehouse Wall Signage

---

This memorandum was prepared in response to the City of Visalia's ("City") request for a statement addressing the Project's exceedance of warehouse wall signs, pursuant to Visalia Municipal Code (VMC) Chapter 17.48: Signs.

The VMC does not include sign standards specifically for large anchor stores such as the proposed Costco Warehouse. The VMC does however restrict the wall sign area for commercial zones to a maximum of 150 square feet (SF). The Costco Project requests warehouse wall signage which would total 522 SF, thus, would exceed the VMC's maximum area for wall signs. The Project site is within Phase 1 of the Carleton Acres Specific Plan area. The Carleton Acres Commercial Phase 1 Master Sign Program ("MSP") was prepared to define the project-specific sign regulations for the northeast corner of West Riggin Avenue and North Shirk Street, which would include the proposed Costco Warehouse.

This memorandum addresses the Project's request for 522 SF of warehouse wall signs considering the intent and requirements of VMC Chapter 17.48: Signs and VMC §17.48.140: Master Signage Program, as discussed below.

Proposed Costco Warehouse Signage

The Project proposes an approximately 159,212-SF Costco Warehouse at the northeastern corner of the Phase 1 area. The MSP requests approval of 522 SF of warehouse wall signage, including four wall signs located only along the south and west main building elevations. No freestanding signs are proposed. The proposed signs along with their respective types, locations, and intent are summarized in **Table 1**.

Table 1: Proposed Warehouse Signage		
TYPE	**LOCATION**	**INTENT**
South Elevation Façade (approximately 500 feet by 32 feet (16,000 SF))		
Type A Sign - 141 SF	This sign would be located at the only warehouse entrance, on the south elevation (at the building's southwest corner).	This sign is intended to direct members from the onsite parking lots to the only warehouse entrance.
Type B Sign - 175 SF	This sign would be located at the eastern portion of the south elevation.	This sign is intended to draw members (pedestrians and drivers) from West Riggin Avenue, where the warehouse building is set back approximately 575 feet north of the roadway.
Subtotal South Elevation 316 SF / 16,000 SF façade = 2 percent		
West Elevation Façade (approximately 325 feet by 31 feet (10,075 SF))		
Type A Sign visible; see above		
Type B sign - 175 SF	This sign would be located at the northern portion of the west elevation.	This sign is intended to draw members (pedestrians and drivers) from North Shirk Street, where the warehouse building is set back approximately 600 feet east of the roadway.
Type C sign - 31 SF	This sign would be located directly above the Costco Tire Center, located centrally on the west elevation.	This sign is intended to direct members from the parking lots to the Tire Center entrance.
Subtotal West Elevation 206 SF / 10,075 SF façade = 2 percent		

VMC Chapter 17.48.010: Purpose

The purpose of this Chapter is to regulate signs as an information system that preserves and enhances the aesthetic character and environmental values of Visalia, its residential neighborhoods, its Downtown, and commercial/industrial areas, while also providing an effective means for members of the public to express themselves through the display of signs. These regulations recognize the importance of business activity to the economic vitality of the City, as well as the need to protect the visual environment. Specifically, these regulations are intended to implement the General Plan and:

A. Provide minimum standards to safeguard life, health, property, public welfare, and traffic safety by controlling the design, quality of materials, construction, illumination, size, location and maintenance of signs and sign structures;

B. Preserve and enhance the visual attractiveness of the City for residents, businesses, and visitors;

C. Protect and enhance property values and community appearance by encouraging signs that are compatible with the architectural style, character, and scale of the building to which they relate and with adjacent buildings and businesses;

D. Restrict signs that may create visual clutter or a nuisance to nearby properties, violate privacy, create hazards or unreasonable distractions for pedestrians and drivers;

E. Provide adequate opportunity for the exercise of the free speech by display of a message or image on a sign, while balancing that opportunity with other community and public interests;

F. Ensure that commercial signs are accessory or auxiliary to a principal business or establishment on the same premises, rather than functioning as general advertising for hire; and

G. Prohibit signs that may cause traffic or pedestrian safety hazards or interfere with ingress and egress.

VMC §17.48.140: Purpose [of the Master Signage Program]

A. Purpose. The purpose of a Master Sign Program is to provide a method for an applicant to integrate the design and placement of signs within a project with the overall design of the development to achieve a more unified appearance. Master Sign Programs may also be used for subdivision projects with a phased development and/or sales plan. Minor variations in dimensional standards and other limitations of this Section may be approved, provided they achieve a result that is superior to what would otherwise be allowed. The Sign Program must demonstrate how it:

1. Improves the safety and welfare of the general public by minimizing distractions, hazards, and obstructions from sign design or placement;

2. Provides for sign design or placement appropriate for the area;

3. Incorporates sign design and placement related to architectural and landscape features on site; and

4. Incorporates sign design, scale, and placement oriented to pedestrian traffic.

Project Consistency with VMC

The proposed signs would preserve and enhance the City's visual attractiveness for residents, businesses, and visitors as they would comply with VMC sign standards concerning design and materials that would complement the building's architecture and color palate, and illumination that includes face lit letters.

The signs proposed at each elevation are scaled to provide sufficient visibility from the adjacent streets to draw members to the warehouse, considering the main building is set back approximately 575 feet north of West Riggin Avenue and approximately 600 feet east of North Shirk Street. Moreover, the need for sufficiently visible signage on the warehouse walls is further necessitated given no freestanding signs are proposed near the Project's access drives along the adjacent roadways. The signs proposed at each elevation are scaled commensurate with the size of each façade. As indicated in **Table 1**, along the south elevation, 315 SF of wall signs are proposed on an approximately 16,000 SF façade, covering only approximately 2 percent of the façade's total area. Along the west elevation, 206 SF of wall signs are proposed on an approximately 10,075 SF façade, also covering only approximately 2 percent of the façade's total area. Additionally, the scale of the proposed warehouse signs would not conflict with the nearest onsite commercial building signage given that approximately 300 feet of separation would exist between the warehouse and the buildings, which would also be subject to the MSP sign standards.

The proposed signs would not create visual clutter given they would cover only approximately 2 percent of the total areas of the south and west façades. Further, the proposed signs would be consistent with the proposed warehouse concerning architectural style and color palette. The proposed exterior elevations would use a mix of building materials including both vertical and horizontal ribbed panels, steel, and concrete. The warehouse would be painted in beige and light grey tones and would be accented steel canopies and a red stripe which extends along the south, east, and west elevations. The warehouse proposes overhead doors, which have a charcoal finish for accenting. Overall, the proposed architecture style would be that of a typical Costco and incorporate various building materials and architectural designs. The proposed Type A and B signs, which would read 'Costco Warehouse,' would include Costco's signature red and blue corporate colors. The proposed Type C sign, which would read 'Tire Center,' would include Costco's signature red corporate colors which would match both the width and color of the red stripe that accents the warehouse elevations. Overall, the proposed warehouse signs would be cohesive with the warehouse architectural theme and would be placed along their respective facades to meet their intent and to aesthetically complement the warehouse's design.

The proposal provides for sign design and placement that is appropriate for the area. As mentioned above, the proposed signs would comply with VMC sign standards concerning design and materials that would complement the building's architecture and color palate. Also, the proposed signs are strategically placed where they are visible. The Type A sign is placed to direct members from the onsite parking lots to the only warehouse entrance and the Type C sign is placed to direct members from the parking lots to the Tire Center entrance. The Type B signs are placed to draw members (pedestrians and drivers) from West Riggin Avenue and North Shirk Street.

The warehouse's southern frontage and proposed parking lots, which border the south and west frontages, would be with various plant types. The proposed Type A and B signs would be placed near the warehouse roofline such that they would not be obstructed by the landscaping.

The proposed signs would not create a nuisance or potentially violate privacy given there are no signs proposed along the northern or eastern elevations where future residential occupants could view such signs. The proposed signs would not create hazards or unreasonable distractions for pedestrians or

drivers, given they are set back from the public right-of-way, as discussed above, and no freestanding signs are proposed.

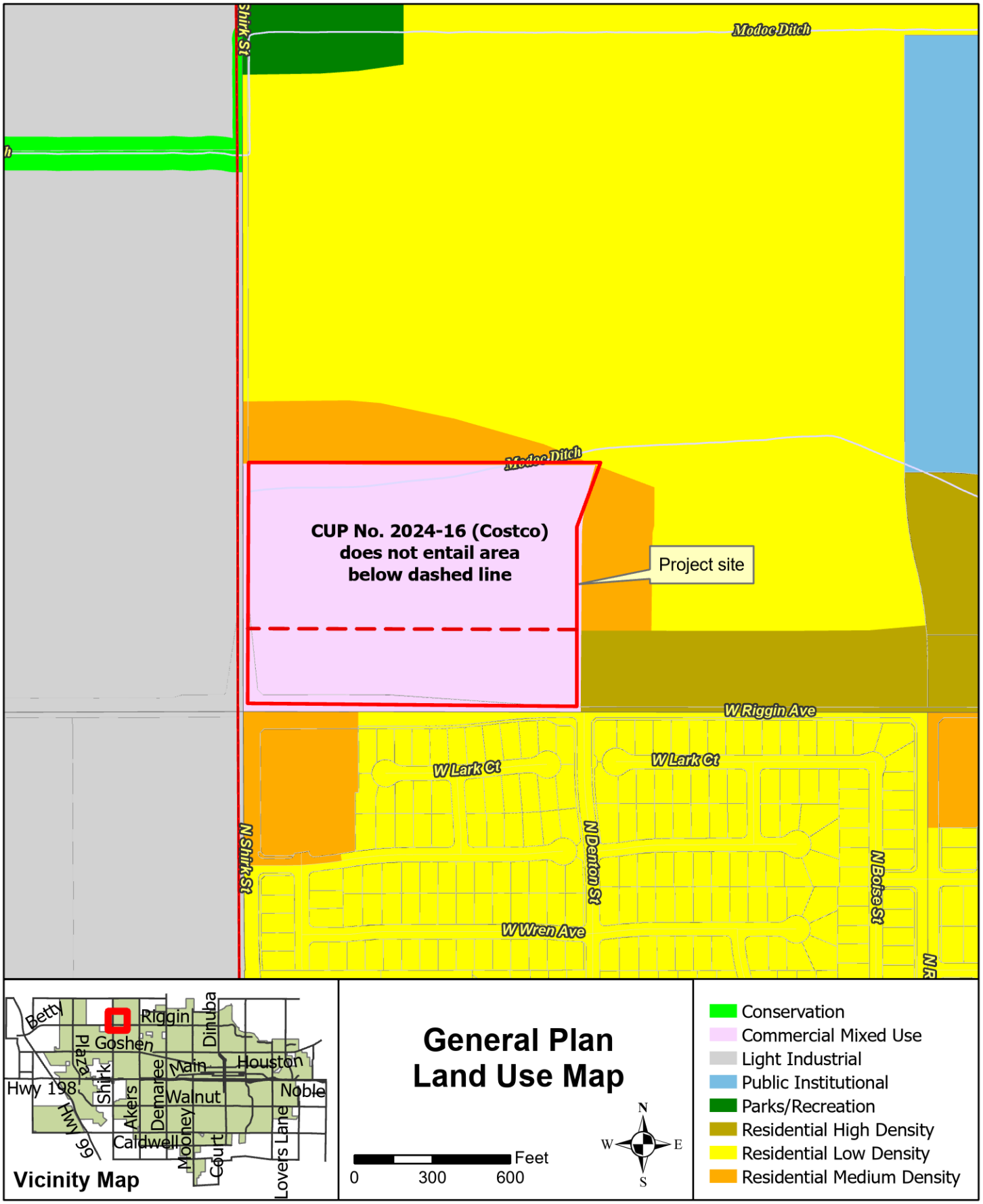
The proposed signs are accessory to the warehouse's principal operations by solely communicating the business's name and location and not including any other advertising.

The proposed signs would all be located on the building facades. No freestanding signs, which could potentially cause traffic or pedestrian hazards or interfere with ingress and egress, are proposed.

Therefore, as is evidenced above, the proposed signs would meet the purposes and intents of the City's sign regulations and master sign program regulations found in VMC §17.48.010 and VMC §17.48.140, respectively, and are considered appropriate given the warehouse building's proposed location, scale, and setting.

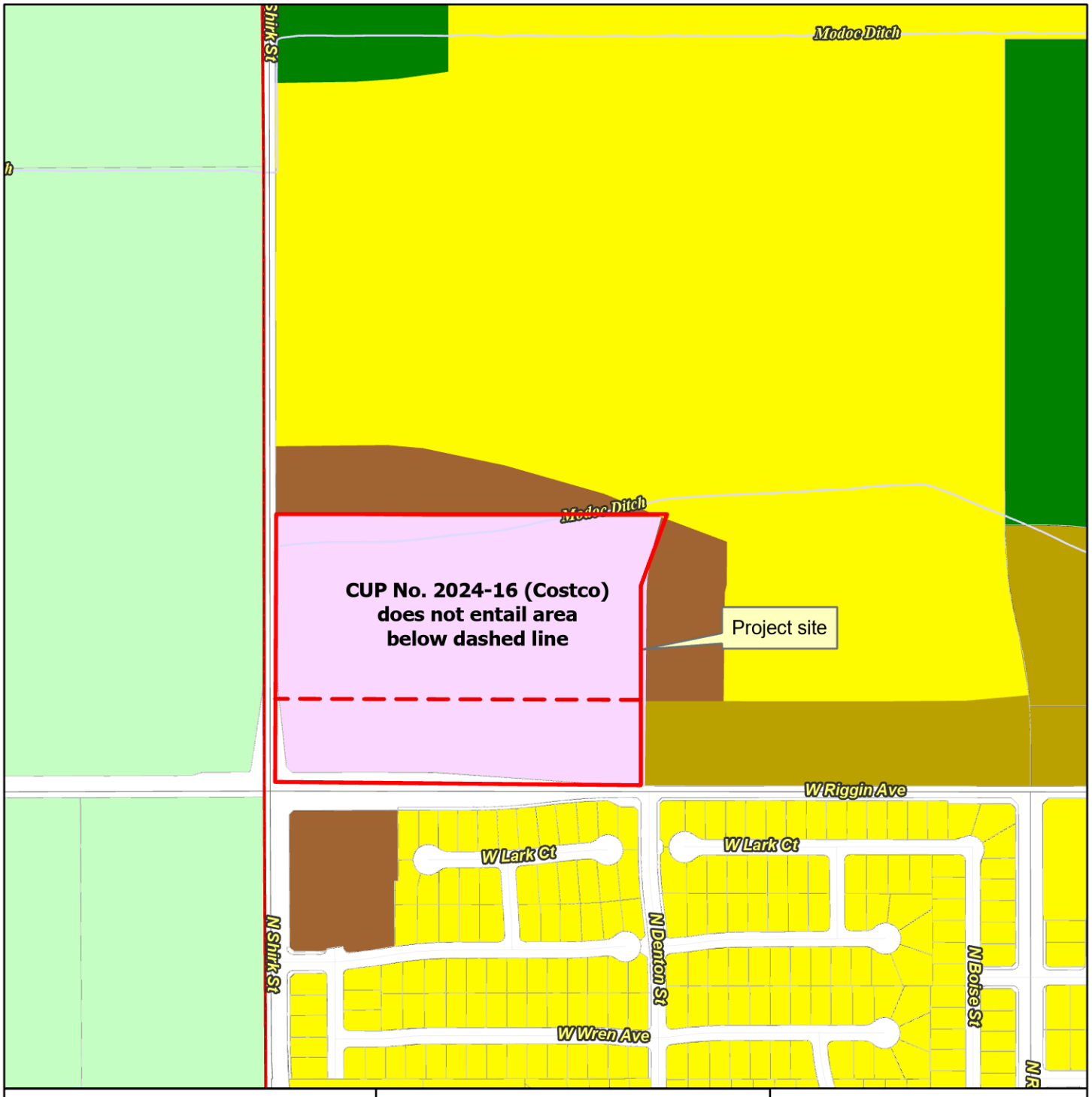
Conditional Use Permit Nos. 2024-16 & 2024-27

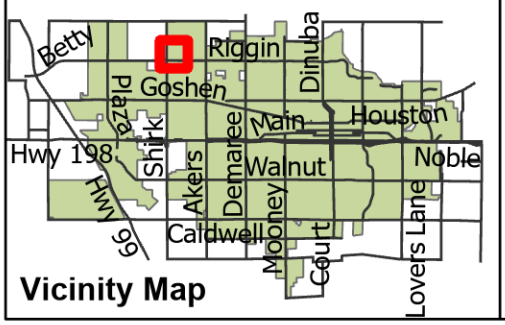
Location: The site is located at the northeast corner of West Riggin Avenue and North Shirk Street (APN: 077-100-108) [portion].



Conditional Use Permit Nos. 2024-16 & 2024-27

Location: The site is located at the northeast corner of West Riggin Avenue and North Shirk Street (APN: 077-100-108) [portion].





Zoning Map

Feet
0 300 600

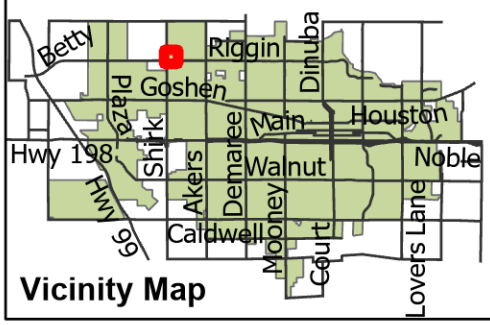
N W E S

- C-MU Mixed Use Commercial
- QP Quasi-Public
- R-1-5 Single-family Residential
- R-M-2 Multi-family Residential
- R-M-3 Multi-family Residential
- County Areas

Conditional Use Permit Nos. 2024-16 & 2024-27

Location: The site is located at the northeast corner of West Riggin Avenue and North Shirk Street (APN: 077-100-108) [portion].





Aerial Photo

Imagery Date: 2024

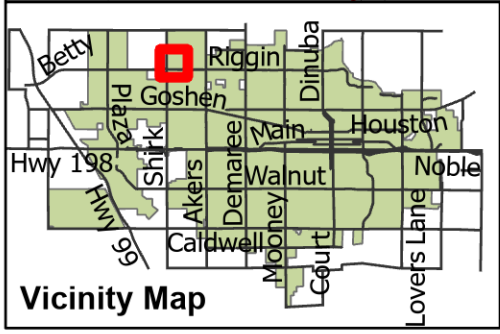
0 300 600 Feet

N
W E
S

Conditional Use Permit Nos. 2024-16 & 2024-27

Location: The site is located at the northeast corner of West Riggin Avenue and North Shirk Street (APN: 077-100-108) [portion].





Location Map

Feet
0 300 600 900

N
W E
S

REPORT TO CITY OF VISALIA PLANNING COMMISSION

HEARING DATE: July 22, 2024

PROJECT PLANNER: Colleen A. Moreno
Phone No.: (559) 713-4031
Email: colleen.moreno@visalia.city

SUBJECT: **Variance No. 2024-02:** A request to allow a variance from the minimum rear yard setback required in the C-MU (Mixed-Use Commercial) zone for trash enclosure placement. The project is located at 916 West Murray Avenue (APN: 093-243-009 & 093-243-010).

STAFF RECOMMENDATION

Staff recommends that the Planning Commission approve Variance No. 2024-02 based upon the findings and conditions in Resolution No. 2024-36. Staff's recommendation is based on the required variance findings and the project's consistency with the policies and intent of the City's General Plan and Zoning Ordinance.

RECOMMENDED MOTION

I move to approve Variance No. 2024-02, based on the findings and conditions in Resolution No. 2024-36.

PROJECT DESCRIPTION

The applicant is requesting a variance to the 15-foot rear yard setback requirement in the C-MU (mixed use commercial) zone for rear yards abutting an R-M zone. A variance is required as per the site plan (Exhibit "A") the applicant is seeking to construct the trash enclosure along the rear property line which abuts two parcels zoned R-M-3 (Multi-Family Residential) that are developed with single-family residences. The trash enclosures would be constructed on the property line resulting in a 0-foot rear yard setback; however, the overall development of the site will comply with all other required development standards.

Currently the project site consists of two vacant parcels, however per the site plan (Exhibit "A") and through Site Plan Review No. 2024-041-1 comments for the project, the applicant has stated that they are seeking to construct a new 2,100 square foot restaurant building on the two parcels. Per the Visalia Municipal Code, the restaurant use is permitted by right in the C-MU zone; however, through the Site Plan Review process the applicant was informed by City of Visalia Solid Waste Division that a city standard three-can enclosure is required. The requirement for the three-can enclosure is a result of the State of California mandatory recycling laws per the passage of AB-341 and AB-1826. These two laws require the need for additional trash bins to meet the States recycling requirements including the requirement to recycle organic waste. Due to the size of the project site and the requirement for solid waste vehicles to service the site, the location of the trash enclosure along the rear property line with a 0-foot rear yard setback is the configuration that is most conducive to both the proposed use of a restaurant and to the Visalia Solid Waste Division.

The applicant has prepared responses to the five required variance findings to support their request, which are included as Exhibit "B". The applicant's findings explain that due to the size of the required three-bin trash enclosure per City Standards, by placing the trash enclosures per code drastically affects the site as it would require the loss of 4-6 parking spaces and 30-40% of

potential building area. Staff also prepared analysis to the five findings to support this request. Staff's findings are included in the "Required Variance Findings" section of the staff report below and in Resolution No. 2024-36.

BACKGROUND INFORMATION

General Plan Land Use Designation	Mixed Use Commercial
Zoning	C-MU (Mixed Use Commercial)
Surrounding Zoning and Land Use	North: R-M-3 / Single Family Residence South: C-MU / People's Care East: C-MU & R-M-3 / Single Family Residence West: R-M-3 / Tax Office
Environmental Review	Categorical Exemption No. 2024-31
Special District	None
Site Plan Review	2024-041

PROJECT EVALUATION

Staff supports the variance of a 0-foot rear yard setback to facilitate the placement of the trash enclosures for the proposed restaurant use in the C-MU zone. This is based on the requirement of a three-bin trash enclosure and the required access for solid waste vehicles, as well as the location of the trash enclosure in relation to the surrounding residential uses and responses to the required findings.

Rear Yard Setbacks and Impacts to Surrounding Residential Uses

In the C-MU zone, a 15-foot rear yard setback is required for commercial uses that abut a residentially zoned site. The location of the project site has residentially zoned sites to the north and east of the site, directly bordering the project site. However, upon staff evaluation the proposed trash enclosure is located at an area that is not near the residential homes but rather is alongside the residential homes rear yard as well, therefore reducing the potential noise impacts to the living area of the homes. The location of the trash enclosures is outside of the adjoining lots required side yard which is similar to the single-family residential side yard requirements regarding mechanical equipment, such as pool/spa equipment and evaporative coolers, which are not permitted in the 5-ft side yard within the buildable area, or within 5-ft of rear/side property lines that are adjacent to the required side yard on adjoining lots (Visalia Municipal Code 17.12.090.F). This comparison demonstrates that noise causing equipment can be permitted if outside of the required side yards of homes to limit the noise impacts on dwelling spaces. In addition, staff is specifically calling out the 7-ft block wall as a condition of approval, on the rear and east property line to assist in the buffering of the noise from the commercial use as depicted in the site plan (Exhibit "A"), per Condition #2.

Site Design Layout

During the site plan review process, the applicant and staff worked on site design considerations to achieve a site layout that predominantly complied with codified development standards while also implementing solid waste requirements to comply with new state mandates while also providing direct access to the service the trash bins. Due to the size of the parcel (0.33-acres), its location on a street corner and abutting residentially zoned property, the setback requirements along each property line limit the overall development area to place structures outside of the setback areas while also meeting development standards for drive aisle widths,

landscaping requirements, and parking stall dimensions. The result of these discussions resulted in the development of the site as depicted per Exhibit A.

The layout, which places the building near the street and the parking lot and trash enclosures to the rear of the site, was done to minimize the placement of the building near residential uses. This layout does result in the trash enclosures being located along the property lines shared with the residential uses, but the location of the trash enclosure was selected because it placed the enclosures in area that predominately screened from view due to the garage building that the enclosures are located behind. Furthermore, the location of the trash enclosures addresses the needs of the Solid Waste Division, which continues to seek ways to minimize the need for the solid waste truck driver to exit the vehicle and physically move the trash bins in an area to be serviced. The location and orientation of the enclosures allows the driver to directly pick-up the trash bins by using the forks on the solid waste truck and provides the ample driveway area to maneuver the vehicle in a safe manner while backing up.

In addition to designing the site to maximum trash service, a seven-foot block wall is required to be constructed on the north and east property lines as required by the Zoning Ordinance. The construction of a seven-foot block wall, along with the design of the trash enclosure, which is developed with cinder block walls, helps in mitigating noise and visual impacts as a result of the site layout. Staff has specifically noted the requirement to construct the seven-foot block wall along the north and east property lines as noted in Condition No. 2 of the project's Conditions of Approval.

Required Variance Findings

The Planning Commission is required to make five findings before a variance can be granted. The applicant has provided responses to the variance findings and staff has included the analysis for each finding below. The applicant's responses to the variance findings are also included in Exhibit "B".

1. *That strict or literal interpretation and enforcement of the specified regulation would result in practical difficulty or unnecessary hardship inconsistent with the objectives of the zoning ordinance;*

   Applicant's Findings: Placement of the refuse enclosures per code drastically affects the ability for the refuse truck to access the bins. To do so requires the sacrifice of 4-6 parking spaces and in turn 30-40% of potential building area. This injures the efficiency of the property/project and we feel is inconsistent with the zoning ordinance.

   Staff Analysis: Due to new state requirements for waste diversion, which has resulted in larger trash enclosures to meet these mandates, the location of the trash enclosures and placement of the required seven-foot block walls, as depicted in the site plan provides the necessary design features that allow the trash bins to be serviced with limited negative impacts to the surrounding residential uses. The applicant has demonstrated through the site plan that all other development standards are complied with including property landscaping, adequate parking, and drive aisle widths that accommodate solid waste vehicles.

2. *That there are exceptional or extraordinary circumstances or conditions applicable to the property involved or to the intended use of the property which do not apply generally to other properties classified in the same zone;*

Applicant's Findings: The property borders R-1 to the North & East which triggers the increased setbacks on those two sides. Additionally, new code requires a third full size enclosure for organic waste which is extraordinary at this point since other properties in the same zone haven't previously been required to provide full size organic waste bins.

Staff Analysis: The mixed-use commercial zone of the project site directly adjoins R-M-3 zoned parcels therefore requiring the 15-ft rear yard setback, if the site did not border residentially zoned parcels a 0-ft setback would be allowed. The location of the parcels being surrounded by R-M-3 lots is unique to the neighborhood, as it is one of the older parts of the city, as well as the new state requirements for waste diversion per California law for all new developments, which has resulted in larger trash enclosures, therefore this presents conditions that would not apply generally to other properties classified in the same zone.

3. *That strict or literal interpretation and enforcement of the specified regulation would deprive the applicant of privileges enjoyed by the owners of other properties classified in the same zone;*

   Applicant's Findings: Strict or literal interpretation of this regulation would deprive us of critical parking and building area that other properties in the same zone have enjoyed.

   Staff Analysis: Due to the project's vicinity to multi-family residential zoned parcels that border the site to the north and east, this requires the larger setback at those property lines (north and east). The overall development of the site complies with the required codified standards including the requirement of a block wall and landscaping. By requiring the strict and literal interpretation of the setback requirement of 15-feet, this severely impacts the project as it restricts the commercial site of both building area and parking and creates issues with how the enclosures are serviced by solid waste vehicles if ample space is not provided for the solid waste truck to maneuver on-site if the standard is strictly enforced.

4. *That the granting of the variance will not constitute a grant of special privilege inconsistent with the limitations on other properties classified in the same zone;*

   Applicant's Findings: Granting of the variance will allow us to utilize the lot to its maximum potential. No additional or special privileges shall be granted to the project by granting this variance.

   Staff Analysis: The variance would allow the commercial property to be developed to the full potential of the site and would provide the required onsite parking and the optimal building area for the proposed restaurant. Granting the variance will not constitute a grant of special privilege inconsistent with other properties classified Mixed Use Commercial. A 0-foot rear yard setback would be permitted if the site did not abut residentially zoned sites. Furthermore, staff concludes the placement of the trash enclosure along with the requirement to construct a 7-foot block wall on property line, in addition to the block wall enclosures the trash bins are located in, will help in further mitigating potential nuisance issues.

5. *That the granting of the variance will not be detrimental to the public health, safety or welfare, or materially injurious to properties or improvements in the vicinity.*

   Applicant's Findings: Under this variance we are requesting a 0' setback on the rear (North) property line and non- street side (East) property line for the purpose of placing the refuse enclosures in an orientation which makes it easy for the refuse truck to access the bins. This location also provides for more parking spaces and restaurant area which means

we can accommodate more patrons at any given time. We believe that contrary to being a detriment the granting of this variance will be a benefit to the properties in the vicinity.

Staff Analysis: The granting of a variance to setbacks is not considered detrimental to the public health, safety or welfare, or materially injurious to properties or improvements in the vicinity.

Environmental Review

The project is considered Categorically Exempt under Section 15305(a) of the Guidelines for the Implementation of the California Environmental Quality Act (CEQA), Categorical Exemption No. 2024-31. This exemption is based on the project being characterized as a variance, which is a minor alteration to land use limitations that does not result in changes in land use or density.

RECOMMENDED FINDINGS

1. *That strict or literal interpretation and enforcement of the specified regulation would result in practical difficulty or unnecessary hardship inconsistent with the objectives of the zoning ordinance;*

   Due to new state requirements for waste diversion, which has resulted in larger trash enclosures to meet these mandates, the location of the trash enclosures and placement of the required seven-foot block walls, as depicted in the site plan provides the necessary design features that allow the trash bins to be serviced with limited negative impacts to the surrounding residential uses. The applicant has demonstrated through the site plan that all other development standards are complied with including property landscaping, adequate parking, and drive aisle widths that accommodate solid waste vehicles.

2. *That there are exceptional or extraordinary circumstances or conditions applicable to the property involved or to the intended use of the property which do not apply generally to other properties classified in the same zone;*

   The mixed-use commercial zone of the project site directly adjoins R-M-3 zoned parcels therefore requiring the 15-ft rear yard setback, if the site did not border residentially zoned parcels a 0-ft setback would be allowed. The location of the parcels being surrounded by R-M-3 lots is unique to the neighborhood, as it is one of the older parts of the city, as well as the new state requirements for waste diversion per California law for all new developments, which has resulted in larger trash enclosures, therefore this presents conditions that would not apply generally to other properties classified in the same zone.

3. *That strict or literal interpretation and enforcement of the specified regulation would deprive the applicant of privileges enjoyed by the owners of other properties classified in the same zone;*

   Due to the project's vicinity to multi-family residential zoned parcels that border the site this requires the larger setback at those property lines (north and east), which development standards for commercially zoned sites not bordering residential would not have to seek a variance as a 0-ft setback is a standard. By requiring the strict and literal interpretation of the setback requirement of 15-ft, this severely impacts the project as it restricts the commercial site of both building area and parking if the standard was strictly enforced and literally applied.

4. *That the granting of the variance will not constitute a grant of special privilege inconsistent with the limitations on other properties classified in the same zone;*

   The variance would allow the commercial property to be developed to the full potential of the site and would provide the required onsite parking and the optimal building area for the proposed restaurant. Granting the variance will not constitute a grant of special privilege inconsistent with other properties classified Mixed Use Commercial a 0-ft rear yard setback is a development standard for commercial zones not abutting a residentially zoned site. Furthermore, upon staff evaluation, the placement of the trash enclosure abuts the rear yard of the residential zoned parcels and with the required 7-ft block wall, therefore not creating a nuisance.

5. *That the granting of the variance will not be detrimental to the public health, safety or welfare, or materially injurious to properties or improvements in the vicinity.*

   By granting this request, it is not considered detrimental to the public health, safety or welfare, or materially injurious to properties or improvements in the vicinity.

6. That the project is considered Categorically Exempt under Section 15305(a) of the Guidelines for Implementation of CEQA, Categorical Exemption No. 2024-31.

RECOMMENDED CONDITIONS OF APPROVAL

1. That Variance No. 2024-02 shall allow a 0-ft rear yard setback for the placement of a trash enclosure on the Mixed-Use Commercial Zone as shown in the site plan included as Exhibit "A".

2. That a 7-ft block wall shall be placed along the rear and east property line that borders the R-M-3 parcels as shown in the site plan included as Exhibit "A".

3. Prior to occupancy of the building, the applicant/developer shall conduct, with Planning Division staff verification, that any on-site lighting installed for this development does not exceed 0.5 foot-candles at the north and east property lines.

4. If the development proposes to install parking lot pole lighting fixtures, then said light poles shall not be located within the landscape areas adjacent to the block wall and said parking lot light poles shall not exceed 0.5 foot-candles at the north and east property lines and shall be shielded and directed toward the project site.

5. That illuminated building signage on the north and east building façade of said building shall be prohibited.

6. That all other federal, state, regional, and county laws and city codes and ordinances be complied with.

APPEAL INFORMATION

According to the City of Visalia Zoning Ordinance Section 17.02.145, an appeal to the City Council may be submitted within ten days following the date of a decision by the Planning Commission. An appeal form with applicable fees shall be filed with the City Clerk at 220 N. Santa Fe Street, Visalia, CA 93291. The appeal shall specify errors or abuses of discretion by

the Planning Commission, or decisions not supported by the evidence in the record. The appeal form can be found on the city's website www.visalia.city or from the City Clerk.

Attachments:

- Related Plans and Policies
- Resolution No. 2024-36
- Exhibit "A" – Site Plan
- Exhibit "B" – Variance Findings Prepared by Applicant
- Site Plan Review Comments No. 2024-041-1
- General Plan Land Use Map
- Zoning Map
- Aerial Map
- Vicinity Map

Environmental Document # 2024-31

NOTICE OF EXEMPTION

City of Visalia
315 E. Acequia Ave.
Visalia, CA 93291

To: County Clerk
County of Tulare
County Civic Center
Visalia, CA 93291-4593

Variance No. 2024-02

PROJECT TITLE

916 W. Murray Ave., Visalia CA 93291 (APN: 093-243-009 & 093-243-010)

PROJECT LOCATION

Visalia | Tulare

PROJECT LOCATION - CITY | **COUNTY**

A request to allow a variance from the minimum rear yard setbacks required in the C-MU (Mixed-Use Commercial) zone.

DESCRIPTION - Nature, Purpose, & Beneficiaries of Project

City of Visalia

NAME OF PUBLIC AGENCY APPROVING PROJECT

Vern Phan, 2423 E. Vine Ct., Visalia CA 93292

NAME AND ADDRESS OF APPLICANT CARRYING OUT PROJECT

Bob Baron, Precision Design, 821 Jenna Ct., Carson City NV 89701

NAME AND ADDRESS OF AGENT CARRYING OUT PROJECT

EXEMPT STATUS: (Check one)

☐ Ministerial - Section 15073
☐ Emergency Project - Section 15071
☒ Categorical Exemption - State type and Section number: **Section 15305(a)**
☐ Statutory Exemptions- State code number:

The project is characterized as a variance, which is a minor alteration to land use limitations that does not result in changes in land use or density.

REASON FOR PROJECT EXEMPTION

Colleen A. Moreno, Assistant Planner | (559) 713-4031

CONTACT PERSON | **AREA CODE/PHONE**

06/25/2024

DATE

Brandon Smith, AICP
ENVIRONMENTAL COORDINATOR

RELATED PLANS AND POLICIES

Zoning Ordinance Chapter 17.19: MIXED USE ZONES

17.19.010 Purpose and intent.

A. The several types of mixed zones included in this chapter are designed to achieve the following:

1. Encourage a wide mix of commercial, service, office, and residential land uses in horizontal or vertical mixed use development projects, or on adjacent lots, at key activity nodes and along corridors.

2. Maintain Visalia's downtown Conyer Street to Tipton and Murray Street to Mineral King Avenue including the Court-Locust corridor to the Lincoln Oval area) as the traditional, medical, professional, retail, government and cultural center;

3. Provide zone districts that encourage and maintain vibrant, walkable environments.

B. The purposes of the individual mixed use zones are as follows:

1. Mixed Use Commercial Zone—(C-MU). The purpose and intent of the mixed use commercial zone district is to allow for either horizontal or vertical mixed use development, and permit commercial, service, office, and residential uses at both at key activity nodes and along corridors. Any combination of these uses, including a single use, is permitted.

2. Mixed Use Downtown Zone—(D-MU). The purpose and intent of the mixed use downtown zone district is to promote the continued vitality of the core of the community by providing for the continuing commercial development of the downtown and maintaining and enhancing its historic character. The zone is designed to accommodate a wide mix of land uses ranging from commercial and office to residential and public spaces, both active and passive. The zone is intended to be compatible with and support adjacent residential uses, along with meeting the needs of the city and region as the urban center of the city; to provide for neighborhood, local, and regional commercial and office needs; to accommodate the changing needs of transportation and integrate new modes of transportation and related facilities; and to maintain and enhance the historic character of the city through the application of architectural design features that complement the existing historic core of the city. (Ord. 2017-01 (part), 2017)

17.19.015 Applicability.

The requirements in this chapter shall apply to all property within the C-MU and D-MU zone districts. (Ord. 2017-01 (part), 2017)

17.19.020 Permitted uses.

Permitted uses in C-MU and D-MU zones shall be determined by Table 17.25.030 in Section 17.25.030. (Ord. 2017-01 (part), 2017)

17.19.030 Conditional and temporary uses.

Conditional and temporary uses in the C-MU and D-MU zones shall be determined by Table 17.25.030 in Section 17.25.030. (Ord. 2017-01 (part), 2017)

17.19.040 Required conditions.

A. A site plan review permit must be obtained for any development in any C-MU and D-MU zones, subject to the requirements and procedures in Chapter 17.28.

B. All businesses, services and processes shall be conducted entirely within a completely enclosed structure, except for off-street parking and loading areas, gasoline service stations, outdoor dining areas, nurseries, garden shops, Christmas tree sales lots, bus depots and transit stations, electric distribution substation, and recycling facilities;

C. All products produced on the site of any of the permitted uses shall be sold primarily at retail on the site where produced. (Ord. 2017-01 (part), 2017)

17.19.050 Off-street parking and loading facilities.

Off-street parking and off-street loading facilities shall be provided as prescribed in Chapter 17.34. (Ord. 2017-01 (part), 2017)

17.19.060 Development standards in the C-MU zones outside the downtown area.

The following development standards shall apply to property located in the C-MU zone and located outside the Downtown Area, which is defined as the area that is south of Murray Avenue, west of Ben Maddox Way, north of Mineral King Avenue, and east of Conyer Street:

A. Minimum site area: five (5) acres.
B. Maximum building height: fifty (50) feet.
C. Minimum required yards (building setbacks):
1. Front: fifteen (15) feet;
2. Rear: zero (0) feet;
3. Rear yards abutting an R-1 or R-M zone district: fifteen (15) feet;
4. Side: zero (0) feet;
5. Side yards abutting an R-1 or R-M zone district: fifteen (15) feet;
6. Street side yard on corner lot: ten (10) feet.
D. Minimum required landscaped yard (setback) areas:
1. Front: fifteen (15) feet;
2. Rear: five (5) feet;
3. Rear yards abutting an R-1 or R-M zone district: five (5) feet;
4. Side: five (5) feet (except where a building is located on side property line);
5. Side yards abutting an R-1 or R-M zone district: five (5) feet;
6. Street side on corner lot: ten (10) feet.
E. The provisions of Chapter 17.58 shall also be met, if applicable. (Ord. 2017-01 (part), 2017)

17.19.070 Development standards in the D-MU zone and in the C-MU zones inside the downtown area.

The following development standards shall apply to property located in the D-MU and C-MU zone and located inside the Downtown Area, which is defined as the area that is south of Murray Avenue, west of Ben Maddox Way, north of Mineral King Avenue, and east of Conyer Street:

A. Minimum site area: No minimum.
B. Maximum building height: one hundred (100) feet.
C. Minimum required yards (building setbacks):
1. Front: zero (0) feet;
2. Rear: zero (0) feet;
3. Rear yards abutting an R-1 or R-M zone district: zero (0) feet;
4. Side: zero (0) feet;
5. Side yards abutting an R-1 or R-M zone district: zero (0) feet;
6. Street side yard on corner lot: zero (0) feet.
D. Minimum required landscaped yard (setback) areas:
1. Front: five (5) feet (except where a building is located on property line);
2. Rear: zero (0) feet;
3. Rear yards abutting an R-1 or R-M zone district: zero (0) feet;
4. Side: five (5) feet (except where a building is located on side property line);
5. Side yards abutting an R-1 or R-M zone district: five (5) feet except where a building is located on side property);
6. Street side on corner lot: five (5) feet.
E. The provisions of Chapter 17.58 shall also be met, if applicable.
(Ord. 2017-13 (part), 2017: Ord. 2017-01 (part), 2017)

Zoning Ordinance Chapter 17.42: VARIANCES

17.42.010 Variance purposes.

The city planning commission may grant variances in order to prevent unnecessary hardships that would result from a strict or literal interpretation and enforcement of certain regulations prescribed by this title. A practical difficulty or unnecessary hardship may result from the size, shape or dimensions of a site or the location of existing structures thereon, from geographic, topographic or other physical conditions on the site or in the immediate vicinity, or from population densities, street locations or traffic conditions in the immediate vicinity. The power to grant variances does not extend to use regulations, because the flexibility necessary to avoid results inconsistent with the objectives of the zoning ordinance is provided by the conditional use provisions of this title.

17.42.020 [Reserved]

17.42.030 Variance powers of city planning commission.

The city planning commission may grant variances to the regulations prescribed by this title with respect to fences and walls, site area, width, frontage coverage, front yard, rear yard, side yards, height of structures, distance between structures, off-street parking facilities, accessory dwelling unit standards pursuant to Sections 17,12.140 through 17.12.200, and downtown building design criteria pursuant to Section 17.58.082 through 17.58.088; in accordance with the procedures prescribed in this chapter.

17.42.040 [Reserved]

17.42.050 Application procedures.

A. Application for a variance or exception shall be made to the city planning commission on a form prescribed by the commission and shall include the following data:

1. Name and address of the applicant;

2. Statement that the applicant is the owner of the property, is the authorized agent of the owners, or is or will be the plaintiff in an action in eminent domain to acquire the property involved;

3. Address and legal description of the property;

4. Statement of the precise nature of the variance or exception requested and the hardship or practical difficulty that would result from the strict interpretation and enforcement of this title;

5. The application shall be accompanied by such sketches or drawings that may be necessary to clearly show applicant's proposal;

6. Additional information as required by the historic preservation advisory board;

7. When reviewing requests for an exception associated with a request for density bonus as provided in Chapter 17.32, Article 2, the applicant shall submit copies of the comprehensive development plan, sketches and plans indicating the nature of the request and written justification that the requested modifications result in identifiable cost reductions required for project to reach target affordability.

B. The application shall be accompanied by a fee set by resolution of the city council sufficient to cover the cost of handling the application.

17.42.060 Hearing and notice.

A. The city planning commission shall hold a public hearing on an application for a variance.

B. Notice of a public hearing shall be given not less than ten days or more than thirty (30) days prior to the date of the hearing by mailing a notice of the time and place of the hearing to property owners within three hundred (300) feet of the boundaries of the area occupied or to be occupied by the use that is the subject of the hearing.

17.42.070 Investigation and report.

The city planning staff shall make an investigation of the application and shall prepare a report thereon that shall be submitted to the city planning commission.

17.42.080 Public hearing procedure.

At a public hearing the city planning commission shall review the application and the statements and drawings submitted therewith and shall receive pertinent evidence concerning the variance, particularly with respect to the findings prescribed in Section 17.42.090.

17.42.090 Variance action of the city planning commission.

A. The city planning commission may grant a variance to a regulation prescribed by this title with respect to fences and walls, site area, width, frontage, coverage, front yard, rear yard, side yards, height of structures, distances between structures or landscaped areas or in modified form if, on the basis of the application, the report of the city planning staff or the evidence submitted, the commission makes the following findings:

1. That strict or literal interpretation and enforcement of the specified regulation would result in practical difficulty or unnecessary hardship inconsistent with the objectives of the zoning ordinance;

2. That there are exceptional or extraordinary circumstances or conditions applicable to the property involved or to the intended use of the property which do not apply generally to other properties classified in the same zone;

3. That strict or literal interpretation and enforcement of the specified regulation would deprive the applicant of privileges enjoyed by the owners of other properties classified in the same zone;

4. That the granting of the variance will not constitute a grant of special privilege inconsistent with the limitations on other properties classified in the same zone;

5. That the granting of the variance will not be detrimental to the public health, safety or welfare, or materially injurious to properties or improvements in the vicinity.

B. The city planning commission may grant a variance to a regulation prescribed by this title with respect to off-street parking facilities, if, on the basis of the application, the report of the city planner or the evidence submitted the commission makes the findings prescribed in subsection (A)(1) of this section and that the granting of the variance will not result in the parking of vehicles on public streets in such a manner as to interfere with the free flow of traffic on the streets.

C. A variance may be revocable, may be granted for a limited time period, or may be granted subject to such conditions as the commission may prescribe.

D. The city planning commission may deny a variance application.

17.42.100 [Reserved]

17.42.110 Appeal to city council.

The decision of the city planning commission on a variance or exception application shall be subject to the appeal provisions of Section 17.02.145.

17.42.120 Lapse of variance.

A variance shall lapse and become void one year following the date on which the variance became effective, unless prior to the expiration of one year, a building permit is issued by the building official and construction is commenced and diligently pursued toward completion on the site that was the subject of the variance application, or a certificate of occupancy is issued by the building official for the site or structure that was the subject of the variance application. A variance may be renewed for an additional period of one year; provided, that prior to the expiration of one year from the date when the variance became effective, an application for renewal of the variance is made to the commission. The commission may grant or deny an application for renewal of a variance.

17.42.130 Revocation.

A variance granted subject to a condition or conditions shall be revoked by the city planning commission if the condition or conditions are not complied with.

17.42.140 New application.

Following the denial of a variance application or the revocation of a variance, no application for the same or substantially the same variance on the same or substantially the same site shall be filed within one year of the date of denial of the variance application or revocation of the variance.

RESOLUTION NO. 2024-36

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF VISALIA APPROVING VARIANCE NO. 2024-02, A REQUEST TO ALLOW A VARIANCE FROM THE MINIMUM REAR YARD SETBACK REQUIRED IN THE C-MU (MIXED USE COMMERCIAL) ZONE. THE PROJECT IS LOCATED AT 916 WEST MURRAY AVENUE (APN: 093-243-009 & 093-243-010).

WHEREAS, Variance No. 2024-02, is a request to allow a variance from the minimum rear yard setback required in the C-MU (Mixed Use Commercial) zone. The project is located at 916 West Murray Avenue (APN: 093-243-009 & 093-243-010); and

WHEREAS, the Planning Commission of the City of Visalia, after duly published notice did hold a public hearing before said Commission on July 22, 2024; and

WHEREAS, the Planning Commission of the City of Visalia finds Variance No. 2024-02, as conditioned by staff, to be in accordance with Chapter 17.42.080 of the Zoning Ordinance of the City of Visalia based on the evidence contained in the staff report and testimony presented at the public hearing; and

WHEREAS, the Planning Commission finds the project to be Categorically Exempt consistent with the California Environmental Quality Act (CEQA) and City of Visalia Environmental Guidelines.

NOW, THEREFORE, BE IT RESOLVED that the project is exempt from further environmental review pursuant to CEQA Section 15305(a).

NOW, THEREFORE, BE IT FURTHER RESOLVED that the Planning Commission of the City of Visalia makes the following specific findings based on the evidence presented:

1. *That strict or literal interpretation and enforcement of the specified regulation would result in practical difficulty or unnecessary hardship inconsistent with the objectives of the zoning ordinance;*

   Due to new state requirements for waste diversion, which has resulted in larger trash enclosures to meet these mandates, the location of the trash enclosures and placement of the required seven-foot block walls, as depicted in the site plan provides the necessary design features that allow the trash bins to be serviced with limited negative impacts to the surrounding residential uses. The applicant has demonstrated through the site plan that all other development standards are complied with including property landscaping, adequate parking, and drive aisle widths that accommodate solid waste vehicles.

2. *That there are exceptional or extraordinary circumstances or conditions applicable to the property involved or to the intended use of the property which do not apply generally to other properties classified in the same zone;*

   The mixed-use commercial zone of the project site directly adjoins R-M-3 zoned parcels therefore requiring the 15-ft rear yard setback, if the site did not border residentially zoned parcels a 0-ft setback would be allowed. The location of the parcels being surrounded by R-M-3 lots is unique to the neighborhood, as it is one of

the older parts of the city, as well as the new state requirements for waste diversion per California law for all new developments, which has resulted in larger trash enclosures, therefore this presents conditions that would not apply generally to other properties classified in the same zone.

3. *That strict or literal interpretation and enforcement of the specified regulation would deprive the applicant of privileges enjoyed by the owners of other properties classified in the same zone;*

   Due to the project's vicinity to multi-family residential zoned parcels that border the site this requires the larger setback at those property lines (north and east), which development standards for commercially zoned sites not bordering residential would not have to seek a variance as a 0-ft setback is a standard. By requiring the strict and literal interpretation of the setback requirement of 15-ft, this severely impacts the project as it restricts the commercial site of both building area and parking if the standard was strictly enforced and literally applied.

4. *That the granting of the variance will not constitute a grant of special privilege inconsistent with the limitations on other properties classified in the same zone;*

   The variance would allow the commercial property to be developed to the full potential of the site and would provide the required onsite parking and the optimal building area for the proposed restaurant. Granting the variance will not constitute a grant of special privilege inconsistent with other properties classified Mixed Use Commercial a 0-ft rear yard setback is a development standard for commercial zones not abutting a residentially zoned site. Furthermore, upon staff evaluation, the placement of the trash enclosure abuts the rear yard of the residential zoned parcels and with the required 7-ft block wall, therefore not creating a nuisance.

5. *That the granting of the variance will not be detrimental to the public health, safety or welfare, or materially injurious to properties or improvements in the vicinity.*

   By granting this request, it is not considered detrimental to the public health, safety or welfare, or materially injurious to properties or improvements in the vicinity.

6. That the project is considered Categorically Exempt under Section 15305(a) of the Guidelines for Implementation of CEQA, Categorical Exemption No. 2024-31.

BE IT FURTHER RESOLVED that the Planning Commission hereby approves the Variance on the real property here described in accordance with the terms of this resolution under the provisions of Section 17.42.080 of the Ordinance Code of the City of Visalia, subject to the following conditions:

1. That Variance No. 2024-02 shall allow a 0-ft rear yard setback for the placement of a trash enclosure on the Mixed Use Commercial Zone as shown in the site plan included as Exhibit "A".
2. That a 7-ft block wall shall be placed along the rear and east property line that borders the R-M-3 parcels as shown in the site plan included as Exhibit "A".
3. Prior to occupancy of the building, the applicant/developer shall conduct, with Planning Division staff verification, that any on-site lighting installed for this development does not exceed 0.5 foot-candles at the north and east property lines.
4. If the development proposes to install parking lot pole lighting fixtures, then said light poles shall not be located within the landscape areas adjacent to the block wall and

said parking lot light poles shall not exceed 0.5 foot-candles at the north and east property lines and shall be shielded and directed toward the project site.

5. That illuminated building signage on the north and east building façade of said building shall be prohibited.
6. That all other federal, state, regional, and county laws and city codes and ordinances be complied with.

Exhibit A

A NEW RESTAURANT BUILDING FOR:

VERN PHAN

916 W. Murray Ave.
Visalia CA, 93291

APRIL 29TH 2024

FOR: SETBACK ENCROACHMENT VARIANCE



1 SITE PLAN
SCALE: 1"=10'

PROJECT DATA:

PLANNER:	PRECISION DESIGN ROBERT BARRON 821 JENNA CT. CARSON CITY, NV 89701 PH: 760-420-3917 EMAIL: PrecisionDesignsSD@gmail.com
OWNERS	VERN PHAN & MELANIE TERNER 2423 E. VINE CT VISALIA, CA 93292
PROJECT ADDRESS	916 W. MURRAY AVE VISALIA, CA 93291
APN'S	093-234-009 & 093-234-010
LEGAL DESCRIPTION:	-
SITE AREA:	14,641 S.F. (0.34 AC)

PRELIMINARY AREA TOTALS

FLOOD ZONE:	X02
OWNER:	C-MU
GENERAL PLAN:	O
EXISTING USE:	VACANT LOT
PROPOSED USE:	USE A-2 RESTAURANT
TYPE OF CONST:	TYPE V-B
SPRINKLERED:	FULLY SPRINKLERED
BUILDING FOOTPRINT	2100 S.F.

SETBACKS

FRONT:	15'
REAR:	0'
REAR ABUTTING R-1 OR R-M	15'
SIDE:	0'
SIDE ABUTTING R-1 OR R-M	15'
STREET SIDE YARDS ON CORNER LOT	10'

LANDSCAPING SETBACKS

FRONT	15'
REAR:	5'
REAR ABUTTING R-1 OR R-M	5'
SIDE:	5' (EXCEPT WHERE A BUILDING IS LOCATED ON SIDE PROPERTY LINE);
SIDE ABUTTING R-1 OR R-M	5'
STREET SIDE ON CORNER LOT	10'

PARKING

REQUIRED PARKING RESTAURANT:	1 SPACES PER 150 S.F. OF FLOOR AREA
TOTAL SPACES REQUIRED	14
ACCESSIBLE SPACES REQUIRED	1 *(PARKING LOTS WITH UP TO 20 SPACES)* (PER 2022 CBC)
TOTAL (P) STANDARD	13
TOTAL (P) ACCESSIBLE	1
LANDSCAPING REQUIREMENT	6% OF PARKING LOT AREA *(PARKING LOTS WITH UP TO 20 SPACES)*
TOTAL PARKING LOT AREA	±6,580 S.F.
TOTAL REQUIRED LANDSCAPING	395 S.F.
TOTAL LANDSCAPING PROPOSED	395 S.F.

UTILITIES

GAS:	THE GAS CO
ELECTRICAL:	SOUTHER CALIFORNIA EDISON
TELEPHONE:	SBC TELEPHONE CO
INTERNET:	SPECTRUM
WATER:	CALIFORNIA WATER CO
SEWER:	CITY OF VISALIA
REFUSE:	CITY OF VISALIA

LEGEND

- (E) CURB & GUTTER @ MURRAY & JACOB TO REMAIN
- (P) REPLACE CURB & GUTTER @ MURRAY & JACOB ADJACENT ADJACENT TO PROJECT PROPERTY LINE
- (P) CURB & GUTTER ON PROJECT AT PARKING LOT
- (P) PATH OF ACCESSIBLE TRAVEL FROM THE PUBLIC RIGHT OF WAY AND FROM THE ACCESSIBLE PARKING SPACE TO THE BUILDING ENTRANCE; PATH OF ACCESSIBLE TRAVEL FROM THE ACCESSIBLE KITCHEN ENTRANCE TO THE TRASH ENCLOSURES.
- (P) GRANTED PORTION OF LOT TO COV FOR NEW PUBLIC RIGHT OF WAY. (N) SOUTH AND EAST PROPERTY LINES SHALL ALIGN TO REAR EDGE OF (N) SIDEWALK
- (E) CONCRETE FLATWORK @ CITY SIDEWALK
- (P) CONCRETE FLATWORK AT (P) SIDEWALKS, RAMPS, APROACHES, ETC.
- (P) ASPHALT AT (P) PARKING LOT
- (P) LANDSCAPING THROUGHOUT

PRECISION DESIGN
Robert H. Barron III, Designer
821 Jenna Ct
Carson City, NV 89701
Voice: 760-420-3917
E-Mail: PrecisionDesignsSD@gmail.com

#	DATE	REVISION	BY

The General & all Sub Contractors shall verify and be responsible for all dimensions and conditions on the job and Precision Design must be notified in writing of any variation from the dimensions & conditions shown in these drawings.

This document shall not be re-produced nor shall the information contained herein be used or disclosed to others except as expressly authorized by Precision Design

A NEW MIXED USE BUILDING FOR:
VERN PHAN
916 W. MURRAY AVE
VISALIA, CA 93291

SHEET TITLE:
SPR
SITE PLAN

SCALE: SEE PLAN
DRAWN BY: RHB
PLOT DATE: 04/29/24
JOB NO: 24-001

SHEET NUMBER:
SPR-1

Exhibit B

CITY OF VISALIA VARIANCE ANALYSIS
OWNERS STATEMENT

DATE:	APRIL 29TH 2024
APPLICANT:	VERN PHAN
PROJECT TITLE:	PROPOSED RESTAURANT AT W. MURRAY AND N. JACOB
SITE PLAN REVIEW No:	SPR 2024-041
PROJECT ADDRESS:	916 W. MURRAY AVE., VISALIA, CA 93291
APN(S):	093-234-009 & 093-234-010
ZONE:	C-MU
GENERAL PLAN:	O

THE PLANNING COMMISSION MUST MAKE THESE FINDINGS FOR A VARIANCE TO BE APPROVED:

1. That strict or literal interpretation and enforcement of the specified regulation would result in practical difficulty or unnecessary hardship inconsistent with the objectives of the zoning ordinance; *Placement of the refuse enclosures per code drastically affects the ability for the refuse truck to access the bins. To do so requires the sacrifice of 4-6 parking spaces and in turn 30-40% of potential building area. This injures the efficiency of the property/project and we feel is inconsistent with the zoning ordinance.*

2. That there are exceptional or extraordinary circumstances or conditions applicable to the property involved which do not apply generally to other properties classified in the same zone; *The property borders R-1 to the North & East which triggers the increased setbacks on those two sides. Additionally, new code requires a third full size enclosure for organic waste which is extraordinary at this point since other properties in the same zone haven't previously been required to provide full size organic waste bins.*

3. That strict or literal interpretation and enforcement of the specified regulation would deprive the applicant of privileges enjoyed by the owners of other properties classified in the same zone; *Strict or literal interpretation of this regulation would deprive us of critical parking and building area that other properties in the same zone have enjoyed.*

4. That the granting of the variance will not constitute a grant of special privilege inconsistent with the limitations on other properties classified in the same zone; *Granting of the variance will allow us to utilize the lot to it's maximum potential. No additional or special privileges shall be granted to the project by granting this variance.*

5. That the granting of the variance will not be detrimental to the public health, safety or welfare, or materially injurious to properties or improvements in the vicinity; *Under this variance we are requesting a 0' setback on the rear (North) P.L. and non- street side (East) P.L. for the purpose of placing the refuse enclosures in an orientation which makes it easy for the refuse truck to access the bins. This location also provides for more parking spaces and restaurant area which means we can accommodate more patrons at any given time. We believe that contrary to being a detriment the granting of this variance will be a benefit to the properties in the vicinity.*

City of Visalia

315 E. Acequia Ave., Visalia, CA 93291

Site Plan Review

June 19, 2024

Site Plan Review No. 2024-041-1:

Pursuant to Zoning Ordinance Chapter 17.28 the Site Plan Review process has found that your application complies with the general plan, municipal code, policies, and improvement standards of the city. A copy of each Departments/Divisions comments that were discussed with you at the Site Plan Review meeting are attached to this document.

Based upon Zoning Ordinance Section 17.28.070, this is your Site Plan Review determination that your project may proceed with filing building permit applications to the Building Department.

This is your Site Plan Review Permit; your Site Plan Review became effective **May 08, 2024**. A site plan review permit shall lapse and become null and void one year following the date of approval unless, prior to the expiration of one year, a building permit is issued by the building official, and construction is commenced and diligently pursued toward completion.

If you have any questions regarding this action, please call the Community Development Department at (559) 713-4359.

Respectfully,

Paul Bernal
Community Development Director
315 E. Acequia Ave.
Visalia, CA 93291

Attachment(s):

- Site Plan Review Comments

City of Visalia

315 E. Acequia Ave., Visalia, CA 93291

Planning Division

Tel: (559) 713-4359; Fax: (559) 713-4814

MEETING DATE May 8, 2024

SITE PLAN NO. 2024-041-1

PARCEL MAP NO.

SUBDIVISION

LOT LINE ADJUSTMENT NO.

Enclosed for your review are the comments and decisions of the Site Plan Review committee. Please review all comments since they may impact your project.

☐ **RESUBMIT** Major changes to your plans are required. Prior to accepting construction drawings for building permit, your project must return to the Site Plan Review Committee for review of the revised plans.

☐ During site plan design/policy concerns were identified, schedule a meeting with

☐ Planning ☐ Engineering prior to resubmittal plans for Site Plan Review.

☐ Solid Waste ☐ Parks and Recreation ☐ Fire Dept.

☑ **REVISE AND PROCEED** (see below)

☐ A revised plan addressing the Committee comments and revisions must be submitted for Off-Agenda Review and approval prior to submitting for building permits or discretionary actions.

☐ Submit plans for a building permit between the hours of 7:30 a.m. and 5:00 p.m., Monday through Thursday, offices closed on Fridays.

☐ Your plans must be reviewed by:

☐ CITY COUNCIL ☐ REDEVELOPMENT

☑ PLANNING COMMISSION ☐ PARK/RECREATION

☑ Variance

☐ HISTORIC PRESERVATION ☐ OTHER:

☐ **ADDITIONAL COMMENTS:**

If you have any questions or comments, please call the Site Plan Review Hotline at (559) 713-4440
Site Plan Review Committee

SITE PLAN REVIEW COMMENTS

Josh Dan, Planning Division, 559-713-4003
Date: May 8, 2024

SITE PLAN NO:	2024-041-1
PROJECT:	916 W. Murray Mixed Use
DESCRIPTION:	PROPOSED CONSTRUCTION OF A 2100 S.F. RESTURANT BUILDING
APPLICANT:	ROBERT H BARRON III
PROP. OWNER:	PHAN VERN F
LOCATION TITLE:	NORTHEAST CORNER OF W MURRAY AVE AND N JACOB ST
APN TITLE:	093-243-009
GENERAL PLAN:	Commercial Mixed Use
ZONING:	C-MU (MIXED USE COMMERCIAL)

Planning Division Recommendation:

☒ Revise and Proceed
☐ Resubmit

Project Requirements

- Variance
- Lot Line Adjustment
- Building Permit

PROJECT SPECIFIC INFORMATION: May 8, 2024

1. The restaurant use is permitted by right within the D-MU Zone.
2. A variance shall be required for the placement of trash enclosures within the 15-ft setback from property line abutting residential.
3. An LLA shall be filed to merger parcels.
4. The proposed development shall comply with the development standards of the zone district as listed in the previous comments below.
5. Building permits will be required and all signage by separate permit.
6. Other information as needed.

PROJECT SPECIFIC INFORMATION: March 13, 2024

1. The restaurant use is permitted by right within the D-MU Zone.
2. A Conditional Use Permit is required to permit a residential use in the D-MU Zone.
3. A Lot Merger shall be required.
4. A 15 ft. landscape setback shall be provided along the southern property boundary. A 10 foot landscape setback shall be provided along the western property boundary. 5 foot landscape setbacks shall be provided to the north and east.
5. Parking stalls shall not be placed within the front and street side yard landscape setbacks.
6. The trash enclosure shall be setback a minimum 15 feet from the northern property boundary and five feet from the eastern property boundary. The trash enclosure shall be relocated or Variance submitted to allow for the encroachment.
7. A Lighting/Photometric Plan shall be provided verifying that no more than 0.5 lumens are proposed at property line.
8. Illuminated signage shall be prohibited to be placed along the northern, eastern, and western building exteriors. Signage shall also only be permitted on the first floor of the structure.
9. All signage shall require a separate Building Permit submittal.
10. Building elevations shall be provided. It is highly recommended that additional architectural ornamentation be provided on the building exteriors.

11. Building elevations shall demonstrate how visibility shall be limited to single family residential areas/uses to the north and east.
12. A Floor Plan shall be provided.
13. An Operational Statement shall be provided with the Building Permit submittal.
14. A Landscape Plan shall be provided. The landscaping plan shall verify that a minimum 6% of the parking lot is landscaped.
15. A 7 foot tall block wall shall be provided along the northern and eastern property boundaries. The wall shall be reduced to a height of 3 feet within the front and street side yard setback areas.
16. Comply with the requirements of the Engineering and Traffic Engineering Divisions.
17. A Building Permit shall be required.

Notes:

1. **The applicant shall contact the San Joaquin Valley Air Pollution Control District to verify whether additional permits are required to conduct the proposed use.**

2. **Prior to completion of a final building inspection for a project, a signed MWELO Certificate of Compliance shall be submitted indicating that all landscaping has been installed to MWELO standards.**

Applicable sections of the Visalia Municipal Code, Title 17 (Zoning):

17.19 Mixed Use Zones

17.30 Development Standards

17.32.080 Maintenance of landscaped areas

17.32.162 Drive-thru lanes performance standards

17.34 Off-street parking and loading facilities

17.36 Fences Walls and Hedges

NOTE: Staff recommendations contained in this document are not to be considered support for a particular action or project unless otherwise stated in the comments. The comments found on this document pertain to the site plan submitted for review on the above referenced date. Any changes made to the plan submitted must be submitted for additional review.

Signature _____


N Jacob St
W Murray Ave
W Murray Ave
N Jacob St

BUILDING/DEVELOPMENT PLAN REQUIREMENTS
ENGINEERING DIVISION

☐ Lupe Garcia	713-4197
☒ Keyshawn Ford	713-4268
☐ Edelma Gonzalez	713-4364
☐ Sarah MacLennan	713-4271
☐ Luqman Ragabi	713-4362

ITEM NO: 2 DATE: MAY 8, 2024

SITE PLAN NO.:	**24-041-1**
PROJECT TITLE:	**MURRAY MIXED USE**
DESCRIPTION:	**PROPOSED CONSTRUCTION OF A 2100 SF RESTAURANT BUILDING, DRIVE WAY, PARKING & REFUSE ENCLOUSRES ON A VACANT LOT**
APPLICANT:	**ROBERT H BARRON III**
PROP OWNER:	**VERN F PHAN**
LOCATION:	**916 W MURRAY AVE**
APN:	**093-243-009**

SITE PLAN REVIEW COMMENTS

☒ REQUIREMENTS (indicated by checked boxes)
☒ Install curb return with ramp, with ***30'*** radius;
☒ Install curb; ☒ gutter ***REPLACE DRIVE APPROACH ON MURRAY***
☒ Drive approach size: ***PER CITY COMMERCIAL STDS*** ☒ Use radius return;
☒ Sidewalk: ***6'*** width; ☒ ***4'*** parkway width at ***JACOB ST. & MURRAY AVE.***
☒ Repair and/or replace any sidewalk across the public street frontage(s) of the subject site that has become uneven, cracked or damaged and may constitute a tripping hazard.
☒ Replace any curb and gutter across the public street frontage(s) of the subject site that has become uneven and has created areas where water can stand.
☒ Right-of-way dedication required. A title report is required for verification of ownership.
☒ Deed required prior to issuing building permit;
☒ City Encroachment Permit Required. ***FOR ANY WORK NEEDED WITHIN PUBLIC RIGHT-OF-WAY*** Insurance certificate with general & auto liability ($1 million each) and workers compensation ($1 million), valid business license, and appropriate contractor's license must be on file with the City, and valid Underground Service Alert # provided prior to issuing the permit. Contact Encroachment Tech. at 713-4414.
☐ CalTrans Encroachment Permit required. ☐ CalTrans comments required prior to issuing building permit. Contacts: David Deel (Planning) 488-4088;
☐ Landscape & Lighting District/Home Owners Association required prior to approval of Final Map. Landscape & Lighting District will maintain common area landscaping, street lights, street trees and local streets as applicable. Submit completed Landscape and Lighting District application and filing fee a min. of 75 days before approval of Final Map.
☒ Landscape & irrigation improvement plans to be submitted for each phase. Landscape plans will need to comply with the City's street tree ordinance. The locations of street trees near intersections will need to comply with Plate SD-1 of the City improvement standards. A street tree and landscape master plan for all phases of the subdivision will need to be submitted with the initial phase to assist City staff in the formation of the landscape and lighting assessment district.
☒ Grading & Drainage plan required. If the project is phased, then a master plan is required for the entire project area that shall include pipe network sizing and grades and street grades. ☒ Prepared by registered civil engineer or project architect. ☒ All elevations shall be based on the City's benchmark network. Storm run-off from the project shall be handled as follows: a) ☒ directed to the City's existing storm drainage system; b) ☐ directed to a permanent on-site basin; or c) ☐ directed to a temporary on-site basin is required until a connection with adequate capacity is available to the City's storm drainage system. On-site basin: : maximum side slopes, perimeter fencing required, provide access ramp to bottom for maintenance.
☐ Grading permit is required for clearing and earthwork performed prior to issuance of the building permit.
☒ Show finish elevations. (Minimum slopes: A.C. pavement = 1%, Concrete pavement = 0.25%. Curb & Gutter =.20%, V-gutter = 0.25%)
☒ Show adjacent property grade elevations. A retaining wall will be required for grade differences greater than 0.5 feet at the property line.
☐ All public streets within the project limits and across the project frontage shall be improved to their full width, subject to available right of way, in accordance with City policies, standards and specifications.
☐ Traffic indexes per city standards:

☐Install street striping as required by the City Engineer.
☒Install landscape curbing (typical at parking lot planters).
☒Minimum paving section for parking: 2" asphalt concrete paving over 4" Class 2 Agg. Base, or 4" concrete pavement over 2" sand.
☒Design Paving section to traffic index of 5.0 min. for solid waste truck travel path.
☒Provide "R" value tests: ***1*** each at ***300' INTERVALS***
☐Written comments required from ditch company Contacts: James Silva 747-1177 for Modoc, Persian, Watson, Oakes, Flemming, Evans Ditch and Peoples Ditch; Jerry Hill 686-3425 for Tulare Irrigation Canal, Packwood and Cameron Creeks; Bruce George 747-5601 for Mill Creek and St. John's River.
☐Access required on ditch bank, 15' minimum ☐ Provide wide riparian dedication from top of bank.
☒Show Valley Oak trees with drip lines and adjacent grade elevations. ☐ Protect Valley Oak trees during construction in accordance with City requirements.
☐A permit is required to remove Valley Oak trees. Contact Public Works Admin at 713-4428 for a Valley Oak tree evaluation or permit to remove. ☐ A pre-construction conference is required.
☐Relocate existing utility poles and/or facilities.
☐Underground all existing overhead utilities within the project limits. Existing overhead electrical lines over 50kV shall be exempt from undergrounding.
☐Subject to existing Reimbursement Agreement to reimburse prior developer:
☒ Fugitive dust will be controlled in accordance with the applicable rules of San Joaquin Valley Air District's Regulation VIII. Copies of any required permits will be provided to the City.
☒ If the project requires discretionary approval from the City, it may be subject to the San Joaquin Valley Air District's Rule 9510 Indirect Source Review per the rule's applicability criteria. A copy of the approved AIA application will be provided to the City.
☒If the project meets the one acre of disturbance criteria of the State's Storm Water Program, then coverage under General Permit Order 2009-0009-DWQ is required and a Storm Water Pollution Prevention Plan (SWPPP) is needed. A copy of the approved permit and the SWPPP will be provided to the City.

☒Comply with prior comments. ☐Resubmit with additional information. ☐Redesign required.

Additional Comments:

1. ***Proposed project will incur impact fees. See page 3 for applicable fees.***

2. ***A building permit is required, standard plan check and inspection fees will apply.***

3. ***Project is located in an "AE" flood zone and shall comply with all FEMA and local floodplain requirements.***

4. ***Project shall be required to complete frontage improvements on Murray and Jacobs which shall include but not be limited to sidewalk, parkway landscaping, sign relocation, City Std. drive approach, and street light installation.***

5. ***Project shall comply with City parking standards PK-1 through PK-4 and City drive approach standards (Refer to commercial standards & C-32).***

6. ***Project shall comply with all accessibility requirements.***

7. ***The proposed radius curb return will require the existing drain inlet to be relocated. Show all work required, including utility relocations. Additionally, curb ramp dedication will be required at the Murray-Jacob intersection. Coordinate with City staff for City Grant Deed procedure.***

8. ***Ensure that there is a minimum of 4' of walking space around the existing traffic signals at Murray/Jacob intersection.***

9. ***Project shall address the existing property lines. Refer to Planning Department for any requirements and procedures.***

10. ***City records indicate there are existing sewer laterals that service each parcel off of Murray. Confirm that the project is connected to City sewer.***

11. ***Site plan indicates that there is 8' of ROW on Jacob street. If this true, project shall be required to dedicate 2' of additional ROW to allow for a 6' sidewalk and 4' parkway. Additionally, any sidewalk shown on private property shall require an easement for pedestrian access.***

SUMMARY OF APPLICABLE DEVELOPMENT IMPACT FEES

Site Plan No: **24-041-1**
Date: **05/08/2024**

Summary of applicable Development Impact Fees to be collected at the time of building permit:

(Preliminary estimate only! Final fees will be based on the development fee schedule in effect at the time of building permit issuance.)

(Fee Schedule Date:**08/19/2023**)
(Project type for fee rates:**RESTAURANT**)

☐ Existing uses may qualify for credits on Development Impact Fees.

FEE ITEM	FEE RATE
☒ Groundwater Overdraft Mitigation Fee	**$1,568/AC**
☒ Transportation Impact Fee	**$17,663/1KSF**
☒ Trunk Line Capacity Fee	**$74/SEAT**
☒ Treatment Plant Fee	**$330/SEAT**
☒ Sewer Front Foot Fee	**$52/FT X TBD**
☒ Storm Drain Acq/Dev Fee	**$8,375/AC**
☐ Park Acq/Dev Fee	
☐ Northeast Specific Plan Fees	
☒ Waterways Acquisition Fee	**$6,148/AC**
☒ Public Safety Impact Fee: Police	**$10,505/AC**
☒ Public Safety Impact Fee: Fire	**$2,298/AC**
☒ Public Facility Impact Fee	**$673/1KSF**
☐ Parking In-Lieu	

Reimbursement:

1.) No reimbursement shall be made except as provided in a written reimbursement agreement between the City and the developer entered into prior to commencement of construction of the subject facilities.
2.) Reimbursement is available for the development of arterial/collector streets as shown in the City's Circulation Element and funded in the City's transportation impact fee program. The developer will be reimbursed for construction costs and right of way dedications as outlined in Municipal Code Section 16.44. Reimbursement unit costs will be subject to those unit costs utilized as the basis for the transportation impact fee.
3.) Reimbursement is available for the construction of storm drain trunk lines and sanitary sewer trunk lines shown in the City's Storm Water Master Plan and Sanitary Sewer System Master Plan. The developer will be reimbursed for construction costs associated with the installation of these trunk lines.

Keyshawn Ford
Keyshawn Ford

SPR24041-1
MURRAY & JACOB
916 W MURRAY AVE

City of Visalia
Building: Site Plan Review Comments

NOTE: These are general comments and DO NOT constitute a complete plan check for your specific project. Please refer to the applicable California Code & local ordinance for additional requirements.

- [x] A building permit will be required. — *For information call (559) 713-4444*
- [x] Submit 1 digital set of professionally prepared plans and 1 set of calculations. (Small Tenant Improvements)
- [ ] Submit 1 digital set of plans prepared by an architect or engineer. Must comply with 2016 California Building Cod Sec. 2308 for conventional light-frame construction or submit 1 digital set of engineered calculations.
- [ ] Indicate abandoned wells, septic systems and excavations on construction plans.

You are responsible to ensure compliance with the following checked items:

- [x] Meet State and Federal requirements for accessibility for persons with disabilities.
- [ ] A path of travel, parking and common area must comply with requirements for access for persons with disabilities.
- [ ] All accessible units required to be adaptable for persons with disabilities.
- [ ] Maintain sound transmission control between units minimum of 50 STC.
- [ ] Maintain fire-resistive requirements at property lines.
- [ ] A demolition permit & deposit is required. — *For information call (559) 713-4444*
- [ ] Obtain required permits from San Joaquin Valley Air Pollution Board. — *For information call (661) 392-5500*
- [x] Plans must be approved by the Tulare County Health Department. — *For information call (559) 624-8011*
- [x] Project is located in flood zone AE. * [ ] Hazardous materials report. MEET FEMA FLOOD REQUIREMENTS
- [ ] Arrange for an on-site inspection. (Fee for inspection $157.00) — *For information call (559) 713-4444*
- [ ] School Development fees. COMMERCIAL: $0.72 PER SF.
- [ ] Park Development fee $_____, per unit collected with building permits.
- [ ] Additional address may be required for each structure located on the site. — *For information call (559) 713-4320*
- [ ] Acceptable as submitted
- [ ] No comments at this time

Additional comments: FOR COMMERCIAL COOKING PROVIDE AN IN GROUND GREASE INTERCEPTOR AND A TYPE I HOOD. BUILDING SHALL BE EQUIPPED WITH (PV) SOLAR AND BATTERY STORAGE SYSTEM. PROVIDE (4) (EV) CAPABLE PARKING SPACES. PROVIDE (2) MIN. EXITS WITH PROPER SEPARATION. THE LANDSCAPING SHALL MEET THE MWELO REQUIREMENTS.

VAL GARCIA 3/7/24

Site Plan Comments Visalia Fire Department Corbin Reed, Fire Marshal 420 N. Burke Visalia CA 93292 559-713-4272 office prevention.division@visalia.city	Date Item # Site Plan # APN:	May 7, 2024 2 24-041-I 093243009

- The Site Plan Review comments are issued as **general overview** of your project. With further details, additional requirements will be enforced at the Plan Review stage. Please refer to the 2022 California Fire Code (CFC), 2022 California Building Codes (CBC) and City of Visalia Municipal Codes.

- **Address numbers** must be placed on the exterior of the building in such a position as to be clearly and plainly visible from the street. Numbers will be at least four inches (4") high and shall be of a color to contrast with their background. If multiple addresses are served by a common driveway, the range of numbers shall be posted at the roadway/driveway. 2022 CFC 505.1

- All hardware on **exit doors, illuminated exit signs and emergency lighting** shall comply with the 2022 California Fire Code. This includes all locks, latches, bolt locks, panic hardware, fire exit hardware and gates.

- **Commercial dumpsters** with 1.5 cubic yards or more shall not be stored or placed within 5 feet of combustible walls, openings, or a combustible roof eave line except when protected by a fire sprinkler system. 2022 CFC 304.3.3

- A **Knox Box key lock system** is required. Where access to or within a structure or area is restricted because of secured openings (doors and/or gates), a key box is to be installed in an approved location. Go to knoxbox.com to order and please allow adequate time for shipping and installation. 2022 CFC 506.1

- Commercial cooking appliances and domestic cooking appliances used for commercial purposes that produce grease laden vapors shall be provided with a **Type 1 Hood**, in accordance with the California Mechanical Code, and an automatic fire extinguishing system. 2022 CFC 904.12 & 609.2

- This item is a **resubmittal**. Please see comments from previous submittals.

Corbin Reed
Fire Marshal



City of Visalia
Police Department
303 S. Johnson St.
Visalia, CA 93292
(559) 713-4370

Date: 5/6/24
Item: 2
Site Plan: SPR24041-1
Name: Sergeant McBride

Site Plan Review Comments

☑ No Comment at this time.

☐ Request opportunity to comment or make recommendations as to safety issues as plans are developed.

☐ Public Safety Impact Fee:
Ordinance No. 2001-11 Chapter 16.48 of Title 16 of the Visalia Municipal Code
Effective date - August 17, 2001.

☐ Impact fees shall be imposed by the City pursuant to this Ordinance as a condition of or in conjunction with the approval of a development project. "New Development or Development Project" means any new building, structure or improvement of any parcels of land, upon which no like building, structure of improvement previously existed. *Refer to Engineering Site Plan comments for fee estimation.

☐ Not enough information provided. Please provide additional information pertaining to:

☐ Territorial Reinforcement: Define property lines (private/public space).

☐ Access Controlled/ Restricted etc.

☐ lighting Concerns:

☐ Traffic Concerns:

☐ Surveillance Issues:

☐ Line of Sight Issues:

☐ Other Concerns:

SITE PLAN REVIEW COMMENTS

CITY OF VISALIA TRAFFIC SAFETY DIVISION

May 8, 2024

ITEM NO: 2 **Added to Agenda** **MEETING TIME: 09:15**

SITE PLAN NO: SPR24041-1 ASSIGNED TO: Josh Dan Josh.Dan@visalia.city

PROJECT TITLE: MURRAY & JACOB

DESCRIPTION: PROPOSED CONSTRUCTION OF A 2100 S.F. RESTURANT BUILDING, DRIVE WAY, PARKING AND REFUSE ENCLOSURES ON A VACANT LOT LOCATED AT THE NE CORNER OF W. MURRAY AND I JACOB. THE EXISTING CURB RETURN AT MURRAY & JACOB SHALL BE REPLACED WITH A NEW 25' R CURB RETURN/RAMP AND THE FRONTAGES IMPROVED WITH 4' PARKWAY AND 6' SIDEWALK W/ C.O.V. STANDARD 25' DRIVE APPROACHES.

APPLICANT: Robert H Barron III - Applicant

OWNER: PHAN VERN F

APN: 093243009

ADDRESS: 916 W MURRAY AVE

THE TRAFFIC DIVISION WILL PROHIBIT ON-STREET PARKING AS DEEMED NECESSARY

☐ No Comments

☒ See Previous Site Plan Comments

☐ Install Street Light(s) per City Standards at time of development.

☐ Install Street Name Blades at Locations at time of development.

☐ Install Stop Signs at ***local road intersection with collector/arterial*** Locations.

☒ Construct parking per City Standards PK-1 through PK-4 at time of development.

☒ Construct drive approach per City Standards at time of development.

☐ Traffic Impact Analysis required (CUP)

☐ Provide more traffic information such as . Depending on development size, characteristics, etc., a TIA may be required.

☐ Additional traffic information required (Non Discretionary)

- ☐ Trip Generation - Provide documentation as to concurrence with General Plan.
- ☐ Site Specific - Evaluate access points and provide documentation of conformance with COV standards. If noncomplying, provide explanation.
- ☐ Traffic Impact Fee (TIF) Program - Identify improvments needed in concurrence with TIF.

Additional Comments:

- Driveway to be one way. Entrance on Murray. Exit on Jacob.

Leslie Blair

Leslie Blair

CITY OF VISALIA
SOLID WASTE DIVISION
336 N. BEN MADDOX
VISALIA CA. 93291
713 - 4532
COMMERCIAL BIN SERVICE

24041-1

May 8, 2024

	No comments.
XX	See comments below
	Revisions required prior to submitting final plans. See comments below.
	Resubmittal required. See comments below.
XX	Customer responsible for all cardboard and other bulky recyclables to be broken down before disposing of in recycle containers
XX	ALL refuse enclosures must be city standard R-1 OR R-2 & R-3 OR R-4
XX	Customer must provide combination or keys for access to locked gates/bins
	Type of refuse service not indicated.
	Location of bin enclosure not acceptable. See comments below.
	Bin enclosure insufficient to comply with state recycling mandates. See comments for suggestions.
	Inadequate number of bins to provide sufficient service. See comments below.
	Drive approach too narrow for refuse trucks access. See comments below.
	Area not adequate for allowing refuse truck turning radius of : Commercial 50 ft. outside 36 ft. inside; Residential 35 ft. outside, 20 ft. inside.
XX	Paved areas should be engineered to withstand a 55,000 lb. refuse truck.
XX	Bin enclosure gates are required
	Hammerhead turnaround must be built per city standards.
	Cul - de - sac must be built per city standards.
XX	Bin enclosures are for city refuse containers only. Grease drums or any other items are not allowed to be stored inside bin enclosures.
XX	Area in front of refuse enclosure must be marked off indicating no parking
XX	Enclosure will have to be designed and located for a STAB service (DIRECT ACCESS) with no less than 38' clear space in front of the bin, included the front concrete pad.
XX	Customer will be required to roll container out to curb for service.
XX	Must be a concrete slab in front of enclosure as per city standards, the width of the enclosure by ten(10) feet, minimum of six(6) inches in depth.
	Roll off compactor's must have a clearance of 3 feet from any wall on both sides and there must be a minimum of 53 feet clearance in front of the compactor to allow the truck enough room to provide service.
	City ordinance 8.28.120-130 (effective 07/19/18) requires contractor to contract with City for removal of construction debris unless transported in equipment owned by contractor or unless contracting with a franchise permittee for removal of debris utilizing roll-off boxes.
Comment	Solid waste services to include trash, recycle, and organic recycling per the State of California's mandatory recycling laws (AB-341 & AB-1826). The proposed city standard (R1/R2) and double (R3/R4) enclosures look good for STAB load collections. Enclosure gates must swing 180 degrees, clear all curbing, and include Cane bolts to secure them when opened.

Jason Serpa, Solid Waste Manager, 559-713-4533
Edward Zuniga, Solid Waste Supervisor, 559-713-4338

Nathan Garza, Solid Waste, 559-713-4532

CALIFORNIA WATER SERVICE

Visalia District 216 North Valley Oaks Drive
Visalia, CA 93292 *Tel:* (559) 624-1600

Site Plan Review Comments From: California Water Service Scott McNamara, Superintendent 216 N Valley Oaks Dr. Visalia, CA 93292 559-624-1622 Office smcnamara@calwater.com	Date: 05/08/2024 Item # 2 Site Plan # 24-041-1 Project: W Murray Mixed Use Description: Applicant: Robert Barron Location: 916 W Murray APN: 093-243-009

The following comments are applicable when checked:

☒ No New Comments

☐ **Water Mains:**
Comments:

☒ **Water Services:**
Comments: Existing service(s) at this location. If the existing service(s) is not sufficient in size to meet the customer's demand, the property owner/developer will need to request and pay for the installation of the correct size service that meets the customers demand, the abandonment of the insufficient size service, and/or any additional services that may be needed. If the existing service(s) lands within a new drive approach, that service will be relocated at the property owner/developer's expense. If there are any existing services that will not be utilized, the property owner/developer will need to pay for the abandonment of those services.

☒ **Fire Hydrants:**
Comments: Fire hydrants will be installed per the Visalia Fire Departments requirements. If fire hydrants are required for your project off an existing water main, Cal Water will utilize our own contractor (West Valley) for installation. This work will be paid for by the property owner/developer.

☒ **Backflow Requirements:**
Comments: A backflow is required if any parcel is for multi-family, commercial, or has multiple services. Please contact Cross Connection Control Specialist Juan Cisneros at *559-624-1670* or *visaliabackflow@calwater.com* for a backflow install packet.

Additional Comments:

☒ Please contact New Business Superintendent Sedelia Sanchez at *559-624-1621 or ssanchez@calwater.com* to start you project with Cal Water.

☐

☐

Susan Currier

From: Lau, Scott@DOT <Scott.Lau@dot.ca.gov>
Sent: Thursday, May 16, 2024 8:21 AM
To: Susan Currier
Cc: Deel, David@DOT; Rajput, Rosy@DOT
Subject: Caltrans response to Visalia SPR 050824

Hi,

Effective May 20th, I will no longer be the SPR Agenda contact for Caltrans District 6. Please refer to David Deel (david.deel@dot.ca.gov) or Rosy Rajput (rosy.rajput@dot.ca.gov) for any SPR inquiries.

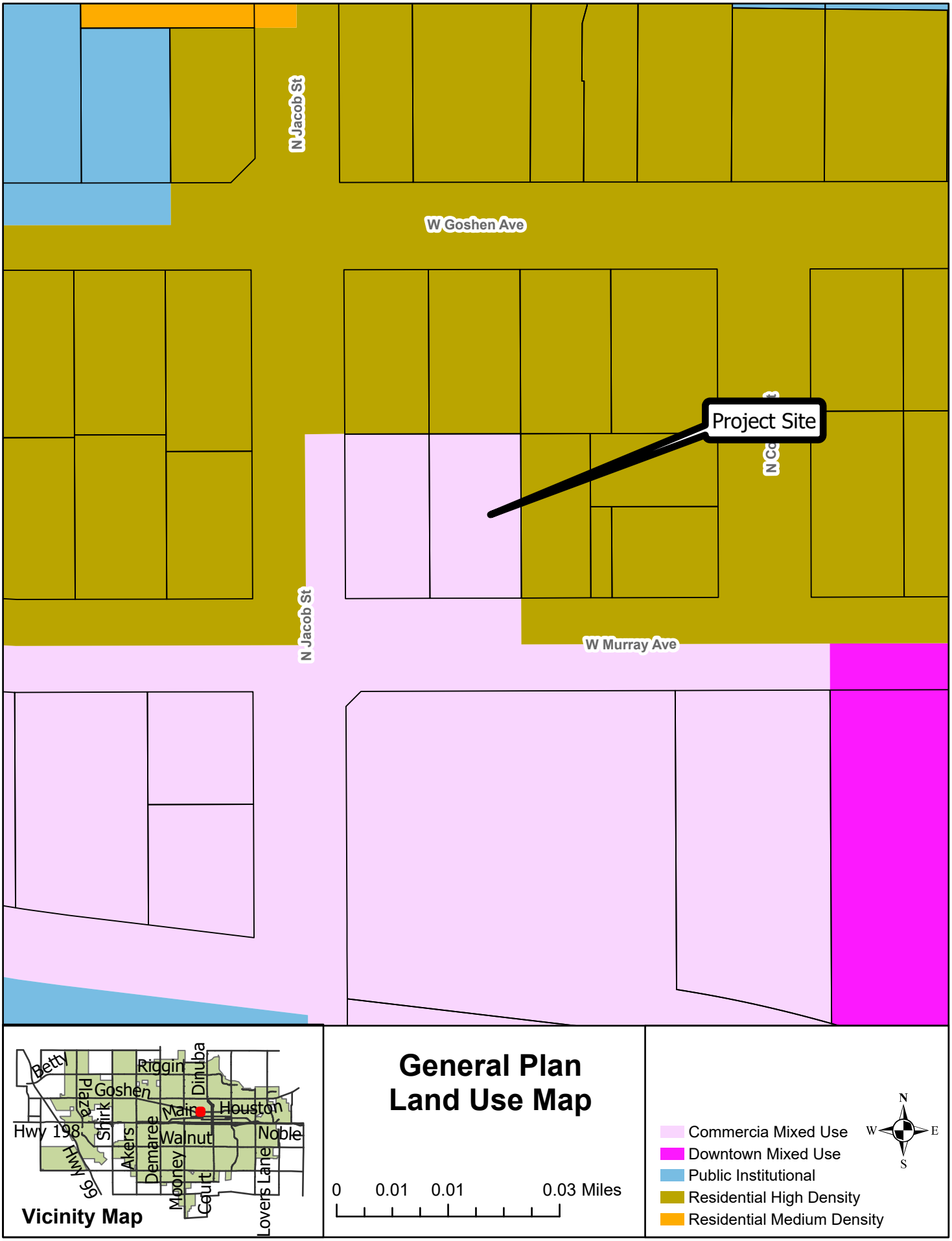
I have reviewed the Visalia SPR Agenda for May 8, 2024, and here are my findings:

1. SPR 24082-1 – Emmanuel Campos Vending Machine: No comments.
2. SPR 24041-1 – Murray & Jacob Restaurant: No comments.
3. SPR 24096 – Shirk & Riggin Industrial Park: Routed and comments will be coming shortly.
4. SPR 24092 – Herrera 4-Plex: No comments.
5. SPR 24095 – Dusty Botts Coffee Sop: No comments.
6. SPR 24097 – Sushi Restaurant: No comments.
7. SPR 24098 – Mooney and Ave 264: Routed.
8. SPR 24099 – Tats and Tans: No comments.

Respectfully,

Scott Lau
Associate Transportation Planner
California Department of Transportation
District 6 Transportation Planning – Regional
1352 West Olive Ave, Fresno, CA 93728
Phone: 559.981.7341
Web: Caltrans District 6




N Jacob St
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Project Site
N Jacob St
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Dinuba
Plaza
Goshen
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Hwy 198
Akers
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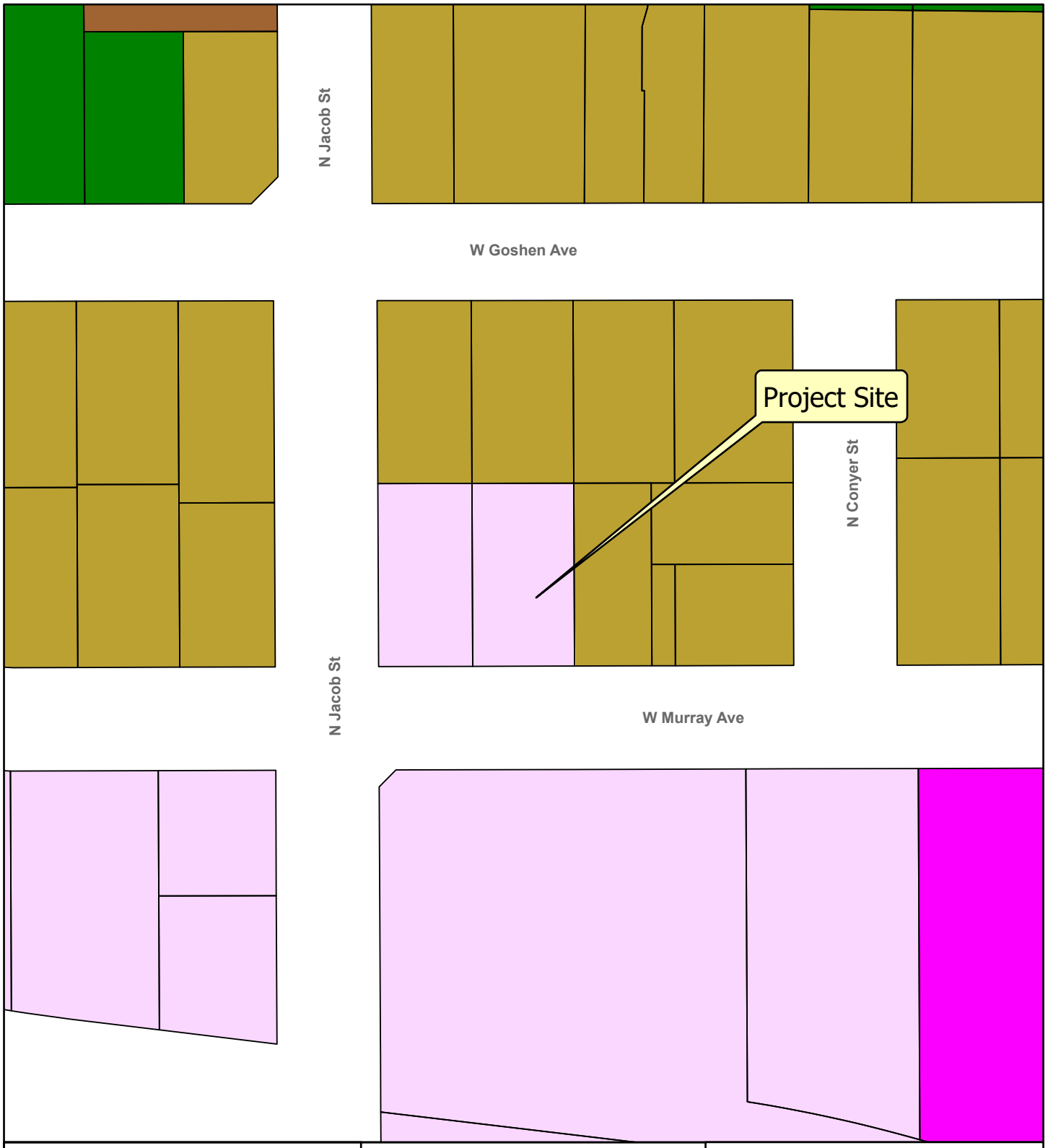
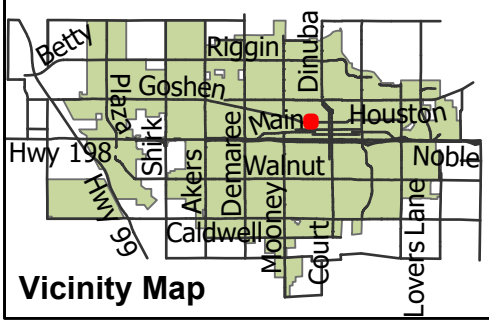
Downtown Mixed Use
Public Institutional
Residential High Density
Residential Medium Density





Vicinity Map

Zoning Map

0 0.01 0.01 0.03 Miles

N
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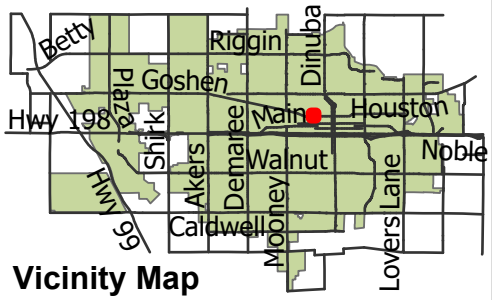
- C-MU Mixed Use Commercial
- D-MU Mixed Use Downtown
- QP Quasi-Public
- R-M-2 Multi-family Residenital
- R-M-3 Multi-family Residenital





Vicinity Map

Aerial Map

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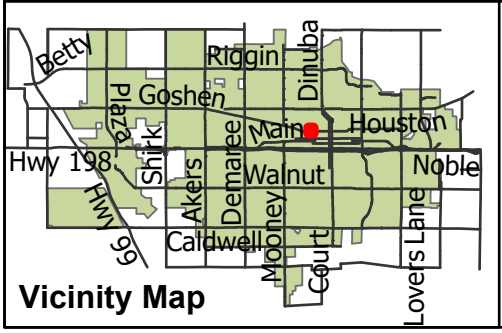

Vicinity Map

Vicinity

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REPORT TO CITY OF VISALIA PLANNING COMMISSION

HEARING DATE: July 22, 2024

PROJECT PLANNER: Cristobal Carrillo, Associate Planner
Phone No.: (559) 713-4443
Email: cristobal.carrillo@visalia.city

SUBJECT: **Annexation No. 2024-01:** A request by San Joaquin Valley Homes to annex two parcels totaling approximately 59.13-acres into the City Limits of Visalia. Upon annexation the area would be zoned R-1-5 (Single-Family Residential, 5,000 square foot minimum site area), which is consistent with the General Plan Land Use Designation of Residential Low Density.

Elliott Tentative Subdivision Map No. 5597: A request by San Joaquin Valley Homes to subdivide two parcels totaling approximately 59.13-acres into 225 lots for single-family residential use and additional outlots for landscaping and a neighborhood park, to be located within the R-1-5 (Single-Family Residential, 5,000 square foot minimum site area) zone.

Project Location: The project site is located west of South Roeben Street, approximately 650 feet south of West Tulare Avenue (APNs: 087-010-006, 008).

STAFF RECOMMENDATION

Annexation No. 2024-01

Staff recommends that the Planning Commission recommend that the City Council approve Annexation No. 2024-01, as conditioned, based on the findings in Resolution No. 2024-08. Staff's recommendation is based on the conclusion that the request is consistent with the Visalia General Plan.

Elliott Tentative Subdivision Map No. 5597

Staff recommends approval of the Elliott Tentative Subdivision Map No. 5597, as conditioned, based on the findings and conditions in Resolution No. 2024-07. Staff's recommendation is based on the conclusion that the request is consistent with the Visalia General Plan, Zoning and Subdivision Ordinances, Housing Accountability Act (Government Code section 65589.5) and the Visalia Housing Element.

RECOMMENDED MOTION

I move to recommend approval of Annexation No. 2024-01, based on the findings and conditions in Resolution No. 2024-08.

I move to approve Elliott Tentative Subdivision Map No. 5597, based on the findings and conditions in Resolution No. 2024-07.

PROJECT DESCRIPTION

The applicant, San Joaquin Valley Homes, has filed entitlement applications for the development of a 225-lot single-family residential subdivision, on 59.13 acres across two parcels located outside of City Limits, within the Tier II urban development boundary. The project site is primarily vacant, with a Valley Oak grove at the northwestern corner, and corn planted at the southwestern corner. Though the project site is not currently within an agricultural preserve, it is designated as Prime Farmland. Entitlements for this project consist of an annexation and tentative subdivision map.

Annexation No. 2024-01 is a request to annex the 59.13 acres into the Visalia City Limits (see Exhibit "B"). Upon annexation, the zoning designation for the project site will be R-1-5 (Single-Family Residential 5,000 square foot minimum site area), as dictated by the Visalia General Plan land use designation of Low Density Residential.

Elliott Tentative Subdivision Map No. 5597 is a request to subdivide the 59.13 acres into a 225-lot single-family residential subdivision (see Exhibit "A"), to be developed in two phases (Exhibit "C"). The density of the subdivision will be 3.8 dwelling units per acre, consistent with the density range of the Low Density Residential General Plan land use classification, which notes density between 2 to 10 units per acre. The development will be serviced by 60-foot wide public local streets containing full improvements (curb, gutter, parkway landscaping, sidewalks, and streetlights), sewer lines, storm drainage, and other public infrastructure, utilities, and services (i.e., electricity and water). The development will also include a 4.15-acre neighborhood park (Outlot E on Exhibit "A"), at the southeast corner of the subdivision, encompassing the existing Persian Ditch. The park will be built by the developer and maintained by the City of Visalia Parks and Recreation Department. Park improvements are to be reimbursed by the Parks and Recreation Department. The operational statement in Exhibit "G" incorrectly states that the park will be maintained via a Landscape and Lighting District.

Additional improvements proposed include installation of a temporary stormwater basin (to be removed with development of Phase 2), and public street improvements to South Roeben Street and West Tulare Avenue, both Collector Streets which will be widened to 42 feet within the boundaries of the subdivision, and South Shirk Street, a Minor Arterial roadway which will be widened to 55 feet on the east side, again within the boundaries of the subdivision. Lastly, improvements will be conducted to the Persian Ditch, to include the widening of existing service roads to 12 feet on each side and installation of six-foot-tall chain link fencing.

Primary access to Phase I of the subdivision will initially be from South Roeben Avenue and West Tulare Avenue, which will connect to South Shirk Street to the west. Upon completion of Phase 2 a second permanent access will be provided along South Shirk Street and a second access will be provided along West Tulare Avenue. Improvements along these major streets include construction of curb, gutter, sidewalks, block walls (where lots do not front onto major roadways), installation of park strip landscaping, streetlights, sanitary sewer, and undergrounding of utility lines. The street improvements associated with this subdivision are discussed in greater detail in the Street Improvements section of the report.

The subdivision map will create 5 lettered outlots to be dedicated to the City of Visalia. The outlots will function as landscaping lots with block walls (Outlots A through D) and a neighborhood park (Outlot E). The outlots account for approximately 4.8 acres of the total 59.13-acre development.

The applicant has not provided floor plans or elevations for the development. However, the operational statement notes that subdivision will consist of a mix of single and two-story homes, ranging in size from 1,735 square feet to 2,855 square feet. Lots will average 8,082 square feet, ranging in size from 6,376 square feet to 12,774 square feet.

The parcel is surrounded by the Savannah Heights subdivision to the south, the Copper Creek subdivision to the east, and agricultural uses to the north and west. The project site, and areas to the north, south, and west are currently outside City Limits and under the jurisdiction of the County of Tulare.

BACKGROUND INFORMATION

General Plan Land Use Designation:	Residential Low Density	
Future City Zoning:	R-1-5 (Single-Family Residential, minimum 5,000 square foot lot size) zone	
Surrounding Zoning and Land Use:	North:	Tulare County jurisdiction, AE-20 (Exclusive Agricultural, 20 Acre Minimum Site Area) / Undeveloped agricultural land
	South:	Tulare County jurisdiction, PD R-A 43 (Planned Development, Rural Residential, One-Acre Minimum Site Area), R-1-20 (Single-Family Residential, minimum 20,000 square foot lot size) / Savannah Heights subdivision, rural residences.
	East:	R-1-5 / Cooper Creek subdivision
	West:	Tulare County jurisdiction, AE-20 / Undeveloped agricultural land, rural residences.
Environmental Review:	Initial Study / Mitigated Negative Declaration No. 2024-05 (State Clearinghouse 2024051257)	
Special Districts:	None	
Site Plan Review:	SPR No. 2023-131	

RELATED PLANS & POLICIES

Please see attached summary of related plans and policies.

SIMILAR AND ADJACENT PROJECTS

On June 26, 2023, the Planning Commission recommended City Council approve Annexation No. 2022-03, and approved Barr & Wood Tentative Subdivision Map No. 5588, Conditional Use Permit No. 2022-06, and Tentative Parcel Map No. 2022-02, located at the northwest corner of South Roeben Street and West Whitendale Avenue. The project was a request to annex and subdivide a 69.35-acre parcel into 136-lots, with private streets and a pocket park for residential use consistent with the R-1-20 Zone.

PROJECT EVALUATION

Staff supports the annexation based on the project's consistency with the Land Use Element of the General Plan. Specifically, the annexation will facilitate a residential subdivision development on two parcels totaling 59.13-acres in a manner that is consistent with residential neighborhoods in the area. Furthermore, staff recommends approval of Elliott Tentative Subdivision Map No. 5597 based on the project's consistency with the Land Use Element of the General Plan, the Zoning and Subdivision Ordinances, Housing Accountability Act (Government Code section 65589.5), and the Visalia Housing Element. The subdivision map proposes to develop two parcels

that are designated for residential development at a density prescribed in the 2030 Visalia General Plan. Furthermore, the project is providing housing that meets the City's Regional Housing Needs for the moderate and above moderate-income levels.

Annexation

The project proponents have filed an application to initiate the annexation of the 59.13-acre project site into the Visalia City Limits. Annexation is required for the City to apply its land use jurisdictional rules and regulations. The Annexation is supported on the basis that the proposed use is consistent with Visalia General Plan **Land Use Element Policy LU-P-21**, which allows for the annexation and development of residential land to occur within the Tier II Urban Development Boundary when it is consistent with the City's Land Use Diagram. The site will be pre-zoned to an R-1-5 classification, consistent with the subject sites General Plan land use designation of Low Density Residential.

The site will have access to requisite utility and infrastructure services, which will be readily available for connection upon development of the project. Though the project is not currently within City Limits, the applicant has submitted a Tentative Subdivision Map to be considered along with the annexation request. Cities have the authority to approve tentative map proposals prior to final approval of an annexation by a local agency formation commission (LAFCO). However, "final maps" for such applications cannot be approved until after an annexation is completed and recorded through the Tulare County Recorder. Staff has included this requirement as Condition No. 4 for Elliott Tentative Subdivision Map No. 5597.

Survey of Adjacent Properties

Staff conducted a pre-consultation meeting with LAFCO on February 28, 2024 to discuss the annexation of the project site. During the meeting LAFCO staff directed the City to conduct an annexation survey of all registered voters associated with seven properties located south of the project site, east of South Shirk Street, between the project site and West Walnut Avenue. All seven properties are outside Visalia City Limits. The intent of the survey was to determine whether there would be support to include the seven properties in the annexation request.

Staff queried the Tulare County Registrar of Voters, who provided mailing information for 16 registered voters associated with the seven properties. The survey was mailed on May 13, 2024. Out of the 16 people surveyed, 12 responded in opposition to the request (75%). The other four people surveyed did not respond. As such, the seven properties are not included in the annexation request.

General Plan Consistency

Land Use Element Policies

The project is consistent with Visalia General Plan Land Use Element Policy LU-P-21, which states that the city should "*Allow annexation and development of residential, commercial, regional retail, and industrial land to occur within the Urban Development Boundary (Tier II) consistent with the City's Land Use Diagram*". The proposed site is within the County of Tulare and is adjacent to and consistent with existing developed residential sites to the south and east. Existing utility infrastructure (i.e., water, sewer, and stormwater) can be provided to accommodate the project at buildout. Furthermore, the site is located within the Tier II Urban Development Boundary (UDB), which allows for immediate development of a project site upon its successful annexation. Note the City of Visalia met General Plan residential land use thresholds for expansion into the Tier II UDB in July 2021.

The project is also consistent with Policy LU-P-55. The policy allows for residential development consistent with the Low-Density Residential designation at a density range between 2 to 10

dwelling units per gross acre. The proposed development will be developed at a residential density of 3.8 units per acre, consistent with the Low Density Residential General Plan land use designation and R-1-5 zoning district. The policy is intended to facilitate *"...single-family detached housing with densities typical of single-family subdivisions.*" The proposal meets the intent of the policy, providing a development with single family residences, with lot sizes and densities compatible with residential areas to the south and east. The development is also situated at a location that transitions smoothly with agricultural areas to the north and west.

Housing Accountability Act (Government Code section 66589.5)

The Housing Accountability Act (HAA) requires local agencies to approve housing developments that are consistent with applicable general plan, zoning, and subdivision standards, including design review, if they were in effect at the time that the housing development application was deemed complete. A local agency cannot disapprove a project or lower its density unless it finds by a preponderance of the evidence that the project would have a specific, adverse impact on public health or safety, and that there is no feasible way to mitigate or avoid the impact[1].

The project is consistent, compliant, and in conformity with the General Plan, Zoning Ordinance, and single-family residential development standards. The lots proposed for the Elliott subdivision meet density standards for the Low-Density Residential land use designation and will be compatible with surrounding developed residential areas. Furthermore, the subdivision will develop a network of local streets and improve adjacent Collector and Arterial public roadways, thereby facilitating increased street connectivity to accommodate future growth areas.

Traffic Impact Analysis

A Traffic Impact Analysis (TIA) was prepared for the proposed project (ref.: Traffic Study: Elliott Tentative Subdivision. Ruettgers & Schuler Civil Engineers, December 2023, Updated June 2024). The purpose of the study is to analyze traffic conditions and operational issues related to the development of the subdivision and its projected level of service (LOS) at opening year and the five-year horizon, and to analyze the corresponding environmental impact as required by the California Environmental Quality Act (CEQA).

The TIA analyzed existing and proposed intersections within a half-mile radius of the project site. The existing and new intersections studied are as follows:

Road 92/Shirk Street & State Route 198 Eastbound Ramps	Roeben Street & Walnut Avenue
Road 92/Shirk Street & State Route 198 Westbound Ramps	Street 3 and Tulare Avenue
Road 92/Shirk Street & Tulare Avenue	Street 6 and Tulare Avenue
Road 92/Shirk Street & Walnut Avenue	Avenue 4 and Shirk Street
Roeben Street & Tulare Avenue	Avenue 6 and Roeben Street

The TIA determined that the proposed project would cause unacceptable LOS at three separate intersections by 2033. Affected intersections and the improvements needed to maintain or improve the operational level of service of the street system in the vicinity of the project are identified below:

[1] Gov. Code Section 65589.5(j)(1).

Intersection	Improvements Required by 2028
Shirk Street and State Route 198, westbound ramps	Signal
Shirk Street and State Route 198, eastbound ramps	Signal
Shirk Street and Walnut Avenue	Signal

The project will pay its fair share of traffic impact fees to support payment of the traffic signals. This is a required mitigation measure and is included as Elliott Tentative Subdivision Map No. 5597, Condition No. 12. With fair share payments, there will be a less than significant impact from the project on existing or proposed intersections.

Please note: improvements to the cited intersections above are part of the City's Capital Improvement Program (CIP). The CIP is a plan that identifies and funds improvements of significant city infrastructure and facilities. Improvements to the Shirk Street and State Route 198 signals are identified within the "Shirk Street & SR 198 Operational Improvements" CIP. The project will signalize both the west and eastbound on/off ramps at the State Route 198 and Shirk Street interchange. Funding for the complete project is expected to be received by the end of this year with construction projected to begin by the Fall of 2025.

Improvements to the Shirk Street and Walnut Avenue signal are identified in the "Shirk St & Walnut Ave Traffic Signal" project, which will be funded through multiple CIPs as the project is intended to improve additional infrastructure outside of the street intersection. This project is estimated to begin construction in January 2026.

City of Visalia Vehicle Miles Traveled (VMT) Thresholds and Implementation Guidelines

Senate Bill (SB) 743, signed in 2013, changes the way transportation impacts are analyzed in California CEQA documents. Vehicle miles traveled (VMT) replaces motorist delay and level of service (LOS) as the metric for impact determination. As a result of the final rulemaking surrounding SB 743 (effective date July 1, 2020), the City of Visalia adopted VMT thresholds and guidelines (City of Visalia VMT Thresholds and Implementation Guidelines, LSA, Adopted March 15, 2021) to address the shift from delay-based LOS CEQA traffic analyses to VMT CEQA traffic analyses.

The adopted guidelines provide details on appropriate "screening thresholds" that can be used to identify when a proposed land use project is anticipated to result in a less-than-significant impact without conducting a more detailed VMT analysis. Screening thresholds include:

1. Land development projects within a 0.5-miles of a Transit Priority Area.
2. Local serving retail projects less than 50,000 square feet.
3. Residential, office, and mixed-use projects within low-VMT generating areas.
4. 100 percent affordable housing projects.
5. Projects that are consistent with the City's General Plan and generating fewer than 1,000 daily trips.
6. Institutional/Government and public service uses.

A land use project need only meet one of the above screening thresholds to result in a less than significant impact.

The project will result in the addition of 225 single-family residential units, resulting in an increase of population for the City of Visalia. A rise in population for the area would result in an increased amount of VMT being produced. However, by using the City of Visalia online VMT screening application, the project was determined to be in TAZ 1358. Utilizing the "VMT Per Capita" metric due to the residential nature of the project, the average VMT was determined to be 8.61 miles per capita. The average VMT per capita for Tulare County is 11.9. Using 84 percent of existing regional VMT, the City's threshold for residential projects is 10.0 VMT per capita. Therefore, the project is determined to be in a low VMT zone, meeting the criteria for screening threshold No. 3 identified above. As a result, the project will result in a less than significant transportation impact.

Street Improvements

The developer of the subdivision will be required to construct major street improvements along South Roeben Street, West Tulare Avenue, and South Shirk Street. Improvements along the subdivision frontage for these major streets include widening of Roeben, Tulare, and Shirk to their ultimate right-of-way design, and extension of Tulare further westward.

South Roeben Street: Is a designated 84-foot-wide collector roadway. The project will require a 42-foot dedication and widening of the street along the eastern boundary of the project site to accommodate two travel lanes with full frontage improvements.

West Tulare Avenue: Is a designated 84-foot-wide collector roadway that will require a 42-foot dedication of the street. Construction will occur along the northern boundary of the project site to accommodate two travel lanes and frontage improvements on the development side. Tulare Avenue will provide a connection between South Shirk Street to Street 6. Please note, the off-site connection of Tulare Avenue to South Roeben Street shall not occur with this project. There is a 19-acre parcel adjacent to the project to the east. When this 19-acre parcel is proposed for residential development, the completion of the Tulare Avenue alignment between Roeben and Street 6 will occur.

South Shirk Street: Is a designated 110-foot-wide arterial roadway.

The project will require an additional dedication of right of way to allow for the widening of Shirk Street up to a total of 55 feet along the western boundary of the project site, to accommodate two travel lanes, with the potential for a street median if sufficient right-of-way is available. Improvements along the right of way within the boundaries of the subdivision map shall include curb, gutter, sidewalks, streetlights, a block wall, and landscaping. All new utilities that will service the residential subdivision will be placed underground, except for the large Southern California Edison distribution/transmission power poles along the South Shirk Street alignment that are within the boundaries of the project site. These poles are required to be relocated by the developer.

Per the Phasing Plan in Exhibit "C", widening of Roeben Street and Tulare Avenue shall take place during the first phase of development, with the remaining improvements to Shirk Street occurring in Phase II.

Local Streets: All local streets will be developed per the City's 60-foot-wide local street standard, except for the northern 600 feet of Street 6, which is proposed for a width of approximately 30 feet due to its location adjacent to a separate parcel. Per the Engineering Division Site Plan Review comments, the width of Street 6 must be a minimum 60 feet. As such, staff recommends inclusion of Condition No. 6 for Elliott Tentative Subdivision Map No. 5597 requiring compliance with all standards of the Engineering and Traffic Engineering Division, in particular as it relates to the width of Street 6. With the inclusion of Condition No. 6, the proposed local streets shall provide

adequate access to Roeben Street, Tulare Avenue, and Shirk Street and will serve to improve circulation for the general area.

Development Standards

The Elliott Tentative Subdivision Map No. 5597 will be developed with setbacks and lot sizes in accordance with the codified standards contained in the Zoning Ordinance for R-1-5 zoned properties. The subdivision does not propose the utilization of small lots or private streets with this single-family residential subdivision.

The setbacks within the R-1-5 zone for lots 5,000 square feet or greater are as follows:

Minimum Lot Area	Front	Side	Street Side	Rear
5,000 sq. ft.	15-ft. to habitable space. 22-ft. to garage, except on curvilinear lots 20-ft. to garage.	5-ft.	10-ft.	25-ft. City standard rear yard setbacks are 25 feet with allowance for one-story structure to go to 20-feet subject to open space requirements.

The development standards are included as Condition No. 3 of Elliott Tentative Subdivision Map No. 5597.

Landscape and Lighting Assessment Districts

A Landscaping and Lighting District (LLD) will be required for the long-term maintenance of the out lots, which include blocks walls, streetlights, and landscaping amenities. The block walls along the major street frontages will be typical City standard block walls. The block wall height shall be reduced to three feet where the block wall runs adjacent to the front yard setback along the front yard areas of the following residential lots: Lots 49, 50, 63, 64, 105, and 135. Staff has included Condition No. 8 to require the stepped down walls.

Staff notes that Lot 1 of the Elliott subdivision and three residential lots to the south abut the proposed 4.15-acre neighborhood park. In order to prevent impacts from usage of the park on the existing and future residences, staff recommends the inclusion of Condition No. 9, requiring placement of a seven-foot-tall block wall along the property boundaries shared between the residential lots and park, except within the 15-foot front yard setback areas of applicable lots, in which a three-foot-tall block wall shall be placed. These walls shall also be maintained by the Lighting and Landscape District.

Agricultural Preservation Ordinance

The 59.13-acre project site is in the City's Tier II urban development boundary and is designated as Prime Farmland as defined per the Tulare County Farmland Mapping and Monitoring Program. As a result, development of this site is subject to the City's recently adopted Agricultural Preservation Ordinance (APO). The purpose and intent of the APO is to address the conversion of prime farmland and farmland of statewide importance through the adoption of an agricultural land preservation program. In addition, the ordinance established a process for the required preservation of agricultural land through the acquisition of agricultural conservation easements or the payment of an in-lieu fee for projects subject to the provisions of this ordinance. Only sites that are considered prime farmland and/or farmland of statewide importance are subject to the ordinance's provisions.

For the Elliott Subdivision, the preserved land obligation shall be calculated at a ratio of one acre of preserved land for each acre of converted land. Converted land acreage shall be calculated by

determining the applicable project acreage less the acreage of exclusions. In addition, the preserved land obligation, as established in Visalia Municipal Code (VMC) Section 18.04.070(A), shall be preserved through acquisition of an agricultural easement in accordance with VMC Section 18.04.080, unless eligible for payment of an in-lieu fee in accordance with VMC Section 18.04.090.

The preserved land obligation shall be satisfied prior to issuance of any permit directly authorizing or resulting in disturbance to the project site. Compliance with the APO is achieved when either the approved agricultural conservation easement has been recorded or the applicant has remitted the approved in-lieu fee to the qualified entity.

Airport Land Use

The proposed project is located approximately 0.95 miles east of the nearest public airport (Visalia Municipal Airport). According to the Tulare County Comprehensive Airport Land Use Plan (TC CALUP), the project site is located within Safety Zone 6 (Traffic Pattern Zone). Per the use matrix provided in the land use plan, single-family residential development is considered compatible within Safety Zone 6. This is subject to a requirement that, in areas where aircraft noise is expected to exceed 60dB CNEL, inhabited residential structures must meet California Noise Standards and be designed to achieve an interior noise level of 45 dB CNEL or less.

Per the CEQA analysis, the project site will not be impacted by the airport use. Noise contours developed for 2019 show that the airport would produce less than 65 dB. Per the applicant, noise exposure at this level would not pose a safety hazard for people residing or working in the project area. Given the above, Elliott Tentative Subdivision Map No. 5597, Condition No. 7 is recommended, requiring the applicant to comply with the TC CALUP and noise requirements therein prior to issuance of a building permit for the tentative subdivision map.

Infrastructure

The project will require improvements to the following infrastructure:

- Water Service: Staff has included Condition No. 5 for Elliott Tentative Subdivision Map No. 5597 which requires a valid Will Serve Letter from the California Water Service Company if, prior to development of the subdivision, the determination of water availability letter lapses.
- Sanitary Sewer: The sewer system will have to be extended to the boundaries of the development where future connection and extension is anticipated. The City of Visalia's draft Sewer Master Plan also indicates the need for installation of a sewer master planned trunk line within South Shirk Street. The sewer lines will be sized to service the entire subdivision. The developer will be required to coordinate with City staff on design and construction requirements for the sanitary sewer. The sanitary sewer master plan for the entire development will be required to be submitted for review prior to approval of any portion of the system. A sewer analysis, which is included in the attached Initial Study / Mitigated Negative Declaration, has been prepared for the site. After a thorough review of the analysis by the City of Visalia Public Works Department, it has been determined that the Wastewater Treatment Facility possesses the capacity to effectively accommodate this development.
- Storm Drainage: Per the Phasing Plan in Exhibit "C", Phase 1 of the subdivision will incorporate a temporary stormwater basin over Lots 37 through 43, and Lots 186 and 187. Per Engineering Division's Site Plan Review comments, the temporary basin shall be maintained onsite until the completion of a future regional stormwater basin for the entire future growth area. Compliance with this requirement shall be enforced via Elliott Tentative

Subdivision Map, Condition No. 14. Compliance with Engineering Division's Site Plan Review requirements is also included as Elliott Tentative Subdivision Map No. 5597, Condition No. 1.

- Canal/Park: The Persian Ditch bisects Outlot E, which is planned for a 4.15-acre neighborhood park. As part of the development, the applicant proposes installation of 12-foot-wide access roads along both sides of the Persian Ditch, with 6-foot-tall chain link fencing with privacy slats added to prevent access. Site Plan Review comments from the Engineering Division note that access roads for the ditch shall be a minimum 15 feet wide. The Elliott Tentative Subdivision Map No. 5597, Condition No. 10 is included requiring the applicant to coordinate with the Persian Ditch Company and comply with any requirements to conduct the proposed improvements.

  In addition to the above, Site Plan Review comments from the Engineering Division indicate that the widening of South Roeben Street will necessitate culvert improvements to the Persian Ditch, where it intersects with South Roeben Street. Improvements shall include installation of a culvert crossing, headwall relocation, sidewalk, access drive approaches for maintenance, fencing, and gates. This is included as Elliott Tentative Subdivision Map No. 5597, Condition No. 1.

Outlot for Park

The project delineates Outlot E for use as a 4.15-acre neighborhood park, located at the southeast corner of the project site, adjacent to South Roeben Street. Per the Landscape Plan in Exhibit "F" and Operational Statement in Exhibit "G" no park amenities are identified currently. Staff recommends the inclusion of Elliott Tentative Subdivision Map No. 5597, Condition No. 13, requiring the applicant to consult and work with the Parks and Recreation Department and comply with all requirements for development of the park, which will include designing and installing amenities for the future park.

Valley Oak Tree Preservation

The proposal will involve the removal of an existing Valley Oak tree grove at the northwest corner of the project site and within the South Shirk Street right of way. Site Plan Review comments received from both the Engineering Division, and City of Visalia Urban Forestry Division, require the applicant comply with the Oak Tree Preservation Ordinance (Visalia Municipal Code Chapter 12.24) if the trees are to be removed. This has been included as Elliott Tentative Subdivision Map No. 5597, Condition No. 11.

Subdivision Map Act

California Government Code Section 66474 lists seven findings for which a legislative body of a city or county shall deny approval of a tentative map if it is able to make any of these findings. These seven "negative" findings have come to light through a recent California Court of Appeal decision (Spring Valley Association v. City of Victorville) that has clarified the scope of findings that a city or county must make when approving a tentative map under the California Subdivision Map Act.

Staff has reviewed the seven findings for a cause of denial and finds that none of the findings can be made for the proposed project. The seven findings and staff's analysis are below. Recommended findings in response to this Government Code section are included in the recommended findings for the approval of the tentative subdivision map.

GC Section 66474 Finding	Analysis
(a) That the proposed map is not consistent with applicable general and specific plans as specified in Section 65451.	The proposed map has been found to be consistent with the City's General Plan. This is included as recommended Finding No. 1 of the Tentative Subdivision Map. There are no specific plans applicable to the proposed map.
(b) That the design or improvement of the proposed subdivision is not consistent with applicable general and specific plans.	The proposed design and improvement of the map has been found to be consistent with the City's General Plan. This is included as recommended Finding No. 1 of the Tentative Subdivision Map. There are no specific plans applicable to the proposed map.
(c) That the site is not physically suitable for the type of development.	The site is physically suitable for the proposed map and its affiliated development plan, which is designated as Low Density Residential and developed at a density of 3.8 units per acre. This is included as recommended Finding No. 3 of the Tentative Subdivision Map.
(d) That the site is not physically suitable for the proposed density of development.	The site is physically suitable for the proposed map and its affiliated development plan, which is designated as Low Density Residential. This is included as recommended Finding No. 4 of the Tentative Subdivision Map.
(e) That the design of the subdivision or the proposed improvements are likely to cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat.	The proposed design and improvements of the map has not been found likely to cause environmental damage or substantially and avoidably injure fish or wildlife or their habitat. This finding is further supported by the project's determination of no new effects under the Guidelines for the Implementation of the California Environmental Quality Act (CEQA), included as recommended Finding No. 8 of the Tentative Subdivision Map.
(f) That the design of the subdivision or type of improvements is likely to cause serious public health problems.	The proposed design of the map has been found to not cause serious public health problems. This is included as recommended Finding No. 2 of the Tentative Subdivision Map.
(g) That the design of the subdivision or the type of improvements will conflict with easements, acquired by the public at large, for access through or use of property within the proposed subdivision.	The proposed design of the map does not conflict with any existing or proposed easements located on or adjacent to the subject property. This is included as recommended Finding No. 5 of the Tentative Subdivision Map.

Public Comment

Three public comment letters were received from property owners immediately south of the project site, two who reside in County jurisdiction and one within City jurisdiction. Their comment contests that the subdivision project will increase traffic volumes on Shirk Street and Roeben Street, will increase the presence of unhoused individuals in the area due to the proposed park, and will destroy existing habitats for wildlife residing in the area, including Grey Foxes, Great Horned Owls, Barn Owls, Possums, Skunks, and Peacocks.

Staff notes that both a TIA and Biological Study have been conducted by the applicant as part of this project, and are included in the Initial Study / Mitigated Negative Declaration attached to this report. Mitigation measures identified in the studies have been incorporated into the project via Condition No. 12 and are considered adequate to address any potential impacts. Specifically, the TIA states that impacts to traffic will be alleviated by the payment of fees for the future signalization of affected street intersections. Animals noted in the comment letter where not identified in the Biological Study as species that appear on any threatened or endangered listing. The Biological Study notes that impacts could potentially occur to the nesting and foraging habitat for the Swainson Hawk and Nuttall's woodpecker, should they reside onsite, and provides mitigation to protect such habitats during subdivision development.

Staff also notes that as a result of annexation the proposed park will benefit from City services, including regular maintenance by Parks and Recreation Department staff, and availability of emergency services from the Police and Fire Departments. Given the above, staff believes that the comments in the letters have been adequately addressed.

No other public comment has been received as of the publication of this report.

Environmental Review

An Initial Study and Mitigated Negative Declaration were prepared for the proposed project. Initial Study and Mitigated Negative Declaration No. 2024-05 (State Clearinghouse 2024051257) disclosed that environmental impacts are determined to be less than significant with the incorporation of mitigation to address significant impacts to the following resources:

- One (1) mitigation measure pertaining to Transportation to reduce impacts to traffic and circulation.
- Four (4) mitigation measures pertaining to Biological Resources to reduce impacts of the Project to special-status wildlife species.
- Four (4) mitigation measures pertaining to Cultural Resources to reduce the impacts of the Project on the potential of exposing historical or archaeological materials during construction.
- Three (3) mitigation measures pertaining to Hydrology and Water Quality to address impacts to surface and groundwater resources.

A 20-day review and comment period through the State Clearinghouse for the Initial Study began on June 27, 2024, and ended on July 17, 2024. Mitigation measures as included as Elliott Tentative Subdivision Map No. 5597, Condition No. 12.

The City of Visalia received two comment letters in response to the Initial Study / Mitigated Negative Declaration from Caltrans and the Department of Toxic Substances Control (DTSC). Both letters are included with the Initial Study / Mitigated Negative Declaration. Comments from Caltrans have been adequately addressed in the TIA. To address the comments raised in DTSC's

letter, Condition Nos. 12.a and 12.b are recommended for incorporation in the conditions of approval for the Elliott Tentative Subdivision Map No. 5597 as follows:

a. That prior to site disturbance, the developer/homebuilder shall consult with a qualified hazardous substance professional to determine whether the applicant should obtain soil samples to test for contaminants of concern (COCs), in particular Pesticides and Organochlorine Pesticides (OCPs) historically used on the property. If suggested to be performed, the developer/homebuilder shall have the qualified hazardous substances professional perform the soil sampling per *Interim Guidance for Sampling Agricultural Properties from DTSC.* The developer/homebuilder shall provide the Planning and Community Preservation Director with a copy of all correspondence between the developer/homebuilder and the qualified hazardous substances professional that details the required direction/recommendation on soil samples to test for COCs/OCPs. The City shall require the developer to comply with specified direction/recommendation as required prior to any further site disturbance.

b. All imported soil and fill material shall be tested to ensure that any contaminants are with DTSC's and the US Environmental Protection Agency's (USEPA's) Regional Screening Levels (RSLs).

Based on the letter and the inclusion of the additional project conditions as noted above, the City concludes that the findings and conclusions of the Initial Study / Mitigated Negative Declaration are still applicable. No other formal comments were received as of the publication of this report.

RECOMMENDED FINDINGS

Annexation No. 2024-01

1. That the Annexation is consistent with the intent of the General Plan and Zoning Ordinance, and is not detrimental to the public health, safety, or welfare, or materially injurious to properties or improvements in the vicinity.
2. That the proposed Annexation, which will re-designate 59.13-acres of AE-20 (Agricultural Exclusive 20-acre) County zone district to an R-1-5 (Single-Family Residential, 5,000 square foot minimum site area) City zone district and will not impose new land uses or development that will adversely affect the subject site or adjacent properties.
3. That the parcel is not located within an Agricultural Preserve.
4. That the parcel will be annexed into Voting District 3 per the Council Election Voting District Map.
5. That an Initial Study was prepared for this project, consistent with CEQA, which disclosed that environmental impacts are determined to be not significant and that Mitigated Negative Declaration No. 2024-05 (State Clearinghouse 2024051257), is hereby adopted. Furthermore, the design of the subdivision and the proposed improvements are not likely to cause substantial environmental damage nor substantially and avoidably injure fish or wildlife or their habitat.

Elliott Tentative Subdivision Map No. 5597

1. That the proposed location and layout of the Elliott Tentative Subdivision Map No. 5597, its improvements and design, and the conditions under which it will be maintained are consistent with the policies and intent of the General Plan, Zoning Ordinance, and Subdivision Ordinance. The 59.13-acre project site, which is the site of the proposed 225-lot single-family residential subdivision, is consistent with Land Use Policy LU-P-21 of the General Plan. Policy LU-P-21

allows for the “annexation and development of residential, commercial, regional retail, and industrial land to occur within the Urban Development Boundary (Tier II) consistent with the City’s Land Use Diagram”.

2. That the proposed Elliott Tentative Subdivision Map No. 5597, its improvements and design, and the conditions under which it will be maintained will not be detrimental to the public health, safety, or welfare, nor materially injurious to properties or improvements in the vicinity, nor is it likely to cause serious public health problems. The proposed tentative subdivision map will be compatible with adjacent land uses. The project site is bordered by existing residential development, an arterial street, and two collector streets.

3. That the site is physically suitable for the proposed tentative subdivision map. The Elliott Tentative Subdivision Map No. 5597 is consistent with the intent of the General Plan, Zoning Ordinance, and Subdivision Ordinance, and is not detrimental to the public health, safety, or welfare or materially injurious to properties or improvements in the vicinity. The project site is adjacent to land zoned for residential development, and the subdivision establishes an arterial, collector, and local street pattern that will serve the subject site and the future development of vacant parcels located to the north and west of the subject site.

4. That the site is physically suitable for the proposed tentative subdivision map and the project’s density, which is consistent with the underlying Low Density Residential General Plan Land Use Designation. The proposed location and layout of the Elliott Tentative Subdivision Map No. 5597, its improvement and design, and the conditions under which it will be maintained is consistent with the policies and intent of the General Plan, Zoning Ordinance, and Subdivision Ordinance. The 59.13-acre project site, which is the site of the proposed 225-lot single-family residential subdivision, is consistent with Land Use Policy LU-P-21.

5. That the proposed Elliott Tentative Subdivision Map No. 5597, the design of the subdivision or the type of improvements will not conflict with easements, acquired by the public at large, for access through or use of, property within the proposed subdivision. The 225-lot subdivision is designed to comply with the City’s Engineering Improvement Standards for major streets. The development of the site with a 225-lot single-family residential subdivision will improve arterial and collector streets (South Roeben Street, West Tulare Avenue, and South Shirk Street), and extend local streets, infrastructure improvements, utilities, right-of-way improvements and a residential lot pattern consistent with existing residential development found in the area.

6. The proposed location of the tentative subdivision map is in accordance with the Visalia General Plan and the objectives of the Zoning and Subdivision Ordinances. The proposed location of the subdivision is in accordance with the objectives of the Zoning Ordinance and the purposes of the zone in which the site is located. Multiple General Plan policies identify the implementation of development standards to ensure that new single-family residential development will contribute to positive land use compatibility. The size of the property combined with the number of residential lots proposed is consistent and compatible with existing surrounding residential development.

   The proposed project will result in the creation of a new single-family residential development at a density of 3.8 units per acre, which is consistent with General Plan land use designation of Low Density Residential and the R-1-5 zoning designation that will be applied to the site when annexed into the city limits.

7. The Housing Accountability Act (GC section 66589.5) requires local agencies to approve housing developments that are consistent with applicable, objective general plan, zoning, and subdivision standards in effect at the time that the housing development project’s application

is determined to be complete. A local agency cannot disapprove a project or lower its density unless it finds by a preponderance of the evidence that the project would have a specific, adverse impact on public health or safety, and there is no feasible way to mitigate or avoid the impact. There is no evidence that the project would cause quantifiable significant unavoidable impacts on public health and safety. The project is consistent, compliant, and in conformity with the General Plan, Zoning Ordinance, and development standards.

8. That an Initial Study was prepared for this project, consistent with CEQA, which disclosed that environmental impacts are determined to be not significant and that Mitigated Negative Declaration No. 2024-05 (State Clearinghouse 2024051257), is hereby adopted. Furthermore, the design of the subdivision or the proposed improvements are not likely to cause substantial environmental damage nor substantially and avoidably injure fish or wildlife or their habitat.

RECOMMENDED CONDITIONS

Annexation No. 2024-01

1. Upon annexation, the territory shall be zoned R-1-5 (Single Family Residential, 5,000 square foot minimum site area), consistent with the pre-zoning designated by the General Plan Land Use Map.
2. That the applicant(s) enter into a Pre-Annexation Agreement with the City which memorializes the required fees, policies, and other conditions applicable to the annexation. The draft Pre-Annexation Agreement is attached herein as Attachment “B” of Resolution No. 2024-08. The agreement is subject to final approval by the City Council of the City of Visalia.

Elliott Tentative Subdivision Map No. 5597

1. That the subdivision map be developed in substantial compliance with the comments and conditions of the Site Plan Review Committee as set forth under Site Plan Review No. 2023-131 incorporated herein by reference.
2. That the Elliott Tentative Subdivision Map No. 5597 be prepared in substantial compliance with the subdivision map in Exhibit “A”.
3. That setbacks for the Elliott Tentative Subdivision Map No. 5597 shall be as follows:

Minimum Lot Area	Front	Side	Street Side	Rear
5,000 sq. ft.	15-ft. to habitable space. 22-ft. to garage, except on curvilinear lots 20-ft. to garage.	5-ft.	10-ft.	25-ft. City standard rear yard setbacks are 25 feet with allowance for one-story structure to go to 20-feet subject to open space requirements.

4. That approval of the Elliott Tentative Subdivision Map No. 5597 shall not become effective unless Annexation No. 2024-01, placing the project site within the corporate limits of the City of Visalia, is approved by the Tulare County Local Agency Formation Commission (LAFCO), and is fully executed to include all conditions contained in the Pre-Annexation Agreement for Annexation No. 2024-01.
5. That prior to the issuance of any residential building permit on the site, the applicant / developer shall obtain and provide the City with a valid Will Serve Letter from the California Water Service Company.

6. That the applicant shall consult with City of Visalia Engineering Development Division and Traffic Engineering Division and comply with any requirements for adequate design and improvement of the proposed local, collection, and arterial streets. The applicant shall redesign Street 6 to comply with the 60-foot width requirement for local streets.
7. That the applicant shall comply with the Tulare County Comprehensive Airport Land Use Plan and noise requirements therein prior to issuance of a building permit for the tentative subdivision map. This is subject to a requirement that, in areas where aircraft noise is expected to exceed 60dB CNEL, inhabited residential structures must meet California Noise Standards and be designed to achieve an interior noise level of 45 dB CNEL or less.
8. That the block walls located within the Landscape and Lighting District lots shall transition to three-foot height within the 15-foot front yard setback areas of the adjoining residential lots identified as Lots 49, 50, 63, 64, 105, and 135.
9. That a seven-foot-tall block wall shall be installed along the shared boundaries of Outlot E, Elliott Subdivision Lot 1, Savannah Heights Unit 3 Subdivision Lots 44 and 45 (1617 and 1618 South Jacques Court), and 1627 South Roeben Street (APN: 087-442-040). For Elliott Subdivision Lot 1, the block wall shall transition to a three-foot-tall block wall within the 15-foot front yard setback area. The walls shall also be maintained by the Lighting and Landscape District for the Elliott Tentative Subdivision Map No. 5597.
10. The applicant shall coordinate with the Persian Ditch Company and shall comply with all its requirements for the installation of improvements to the Persian Ditch within the project site.
11. The applicant shall comply with all requirements of Visalia Municipal Code Chapter 12.24 (Oak Tree Preservation), for the removal of any Valley Oak trees from the project site.
12. That the Mitigation Monitoring and Reporting Program and its mitigation measures adopted with the Initial Study / Mitigated Negative Declaration No. 2024-05 (State Clearinghouse 2024051257) and all conditions of the Elliott Tentative Subdivision Map No. 5597, including the following conditions in response to the Department of Toxic Substances Control (DTSC) comment letter be met during construction and upon final occupancy and ongoing operation of the project:
    a. That prior to site disturbance, the developer/homebuilder shall consult with a qualified hazardous substance professional to determine whether the applicant should obtain soil samples to test for contaminants of concern (COCs), in particular Pesticides and Organochlorine Pesticides (OCPs) historically used on the property. If suggested to be performed, the developer/homebuilder shall have the qualified hazardous substances professional perform the soil sampling per Interim Guidance for Sampling Agricultural Properties from DTSC. The developer/homebuilder shall provide the Planning and Community Preservation Director with a copy of all correspondence between the developer/homebuilder and the qualified hazardous substances professional that details the required direction/recommendation on soil samples to test for COCs/OCPs. The City shall require the developer to comply with specified direction/recommendation as required prior to any further site disturbance.
    b. All imported soil and fill material shall be tested to ensure that any contaminants are with DTSC's and the US Environmental Protection Agency's (USEPA's) Regional Screening Levels (RSLs).
13. That the applicant shall consult with the City of Visalia Parks and Recreation Department and shall comply with all requirements for development of the park on Outlot E, which will include designing and installing amenities for the future park.

14. That the temporary stormwater basin located on Lots 37 through 43, and Lots 186 and 187, shall be maintained onsite until a permanent regional ponding basin is established to service the development.
15. That the project be developed in substantial compliance with all improvements depicted and described in Exhibits “A” through “G”.
16. That the developer shall inform and have future homeowners of the Elliott subdivision sign and acknowledge Tulare County’s “Right to Farm” Ordinance. This informs future residential owners that the farming operations located to the north and west, which are located in Tulare County, are protected and cannot be declared a nuisance if operating in a manner consistent with proper and accepted customs and standards.
17. That all applicable federal, state, regional, and city policies and ordinances be met.

APPEAL INFORMATION

Annexation No. 2024-01

For the Annexation, the Planning Commission’s recommendation is advisory only. The final decision will be by the Visalia City Council following a public hearing. Therefore, the Planning Commission’s recommendation in this matter is not appealable.

Elliott Tentative Subdivision Map No. 5597

According to the City of Visalia Subdivision Ordinance Section 16.28.080, an appeal to the City Council may be submitted within ten days following the date of a decision by the Planning Commission. An appeal with applicable fees shall be in writing and shall be filed with the City Clerk at 220 North Santa Fe St., Visalia, CA. The appeal shall specify errors or abuses of discretion by the Planning Commission, or decisions not supported by the evidence in the record. The appeal form can be found on the City’s website www.visalia.city or from the City Clerk.

Attachments:

- Related Plans and Policies
- Resolution No. 2024-08 – Annexation No. 2024-01
  - Attachment “A” – Annexation Area
  - Attachment “B” – Annexation Agreement
- Resolution No. 2024-07 – Elliott Tentative Subdivision Map No. 5597
- Exhibit "A" – Elliott Tentative Subdivision Map No. 5597
- Exhibit “B” – Annexation Area
- Exhibit “C” – Phasing Plan
- Exhibit “D” – Atypical Lot Plan
- Exhibit “E” – Street Cross Sections Plan
- Exhibit “F” – Landscape Plan
- Exhibit “G” – Operational Statement
- Initial Study / Mitigated Negative Declaration No. 2024-05
- Department of Toxic Substances Control (SJVAPCD) Comment Letter, July 3, 2024
- Caltrans Comment Letters, July 16, 2024, June 13, 2024, and March 22, 2024
- Public Comment Letters
- Site Plan Review Item No. 2023-131
- General Plan Land Use Map
- Zoning Map
- Aerial Map
- Location Map

RELATED PLANS AND POLICIES

General Plan and Zoning: The following General Plan and Zoning Ordinance policies apply to the proposed project:

General Plan Land Use Policies:

LU-P-19: Ensure that growth occurs in a compact and concentric fashion by implementing the General Plan's phased growth strategy. The General Plan Land Use Diagram establishes three growth rings to accommodate estimated City population for the years 2020 and 2030. The Urban Development Boundary I (UDB I) shares its boundaries with the 2012 city limits. The Urban Development Boundary II (UDB II) defines the urbanizable area within which a full range of urban services will need to be extended in the first phase of anticipated growth with a target buildout population of 178,000. The Urban Growth Boundary (UGB) defines full buildout of the General Plan with a target buildout population of 210,000. Each growth ring enables the City to expand in all four quadrants, reinforcing a concentric growth pattern.

LU-P-21: Allow annexation and development of residential, commercial, regional retail, and industrial land to occur within the Urban Development Boundary (Tier II) and the Urban Growth Boundary (Tier III) consistent with the City's Land Use Diagram, according to the following phasing thresholds: • "Tier II": Tier II supports a target buildout population of approximately 178,000. The expansion criteria for land in Tier II is that land would only become available for development when building permits have been issued in Tier I at the following levels, starting from April 1, 2010:

Residential: after permits for 5,850 housing units have been issued.

LU-P-55: Update the Zoning Ordinance to reflect the Low Density Residential designation on the Land Use Diagram for development at 2 to 10 dwelling units per gross acre, facilitating new planned neighborhoods and infill development in established areas. This designation is intended to provide for single-family detached housing with densities typical of single-family subdivisions. Duplex units, townhouses, and small-lot detached housing may be incorporated as part of Low Density Residential developments. Development standards will ensure that a desirable single-family neighborhood character is maintained.

Visalia Municipal Code

Chapter 17.12

R-1 SINGLE-FAMILY RESIDENTIAL ZONE

17.12.010 Purpose and intent.

In the R-1 single-family residential zones (R-1-5, R-1-12.5, and R-1-20), the purpose and intent is to provide living area within the city where development is limited to low density concentrations of one-family dwellings where regulations are designed to accomplish the following: to promote and encourage a suitable environment for family life; to provide space for community facilities needed to compliment urban residential areas and for institutions that require a residential environment; to minimize traffic congestion and to avoid an overload of utilities designed to service only low density residential use.

17.12.015 Applicability.

The requirements in this chapter shall apply to all property within R-1 zone districts.

17.12.020 Permitted uses.

In the R-1 single-family residential zones, the following uses shall be permitted by right:

A. One-family dwellings;

B. Raising of fruit and nut trees, vegetables and horticultural specialties;

C. Accessory structures located on the same site with a permitted use including private garages and carports, one guest house, storehouses, garden structures, green houses, recreation room and hobby shops;

D. Swimming pools used solely by persons resident on the site and their guests; provided, that no swimming pool or accessory mechanical equipment shall be located in a required front yard or in a required side yard;

E. Temporary subdivision sales offices;

F. Licensed day care for a maximum of fourteen (14) children in addition to the residing family;

G. Twenty-four (24) hour residential care facilities or foster homes, for a maximum of six individuals in addition to the residing family;

H. Signs subject to the provisions of Chapter 17.48;

I. The keeping of household pets, subject to the definition of household pets set forth in Section 17.04.030;

J. Accessory dwelling units as specified in Sections 17.12.140 through 17.12.200;

K. Adult day care up to twelve (12) persons in addition to the residing family;

L. Other uses similar in nature and intensity as determined by the city planner;

M. Legally existing multiple family units, and expansion or reconstruction as provided in Section 17.12.070.

N. Transitional or supportive housing for six (6) or fewer resident/clients.

O. In the R-1-20 zone only, the breeding, hatching, raising and fattening of birds, rabbits, chinchillas, hamsters, other small animals and fowl, on a domestic noncommercial scale, provided that there shall not be less than one thousand (1,000) square feet of site area for each fowl or animal and provided that no structure housing poultry or small animals shall be closer than fifty (50) feet to any property line, closer than twenty-five (25) feet to any dwelling on the site, or closer than fifty (50) feet to any other dwelling;

P. In the R-1-20 zone only, the raising of livestock, except pigs of any kind, subject to the exception of not more than two cows, two horses, four sheep or four goats for each site, shall be permitted; provided, that there be no limitation on the number of livestock permitted on a site with an area of ten acres or more and provided that no stable be located closer than fifty (50) feet to any dwelling on the site or closer than one hundred (100) feet to any other dwelling;

17.12.030 Accessory uses.

In the R-1 single-family residential zone, the following accessory uses shall be permitted, subject to specified provisions:

A. Home occupations subject to the provisions of Section 17.32.030;

B. Accessory buildings subject to the provisions of Section 17.12.100(B).

C. Cottage Food Operations subject to the provisions of Health and Safety Code 113758 and Section 17.32.035.

17.12.040 Conditional uses.

In the R-1 single-family residential zone, the following conditional uses may be permitted in accordance with the provisions of Chapter 17.38:

A. Planned development subject to the provisions of Chapter 17.26;

B. Public and quasi-public uses of an educational or religious type including public and parochial elementary schools, junior high schools, high schools and colleges; nursery schools, licensed day care facilities for more than fourteen (14) children; churches, parsonages and other religious institutions;

C. Public and private charitable institutions, general hospitals, sanitariums, nursing and convalescent homes; not including specialized hospitals, sanitariums, or nursing, rest and convalescent homes including care for acute psychiatric, drug addiction or alcoholism cases;

D. Public uses of an administrative, recreational, public service or cultural type including city, county, state or federal administrative centers and courts, libraries, museums, art galleries, police and fire stations, ambulance service and other public building, structures and facilities; public playgrounds, parks and community centers;

E. Electric distribution substations;

F. Gas regulator stations;

G. Public service pumping stations, i.e., community water service wells;

H. Communications equipment buildings;

I. Planned neighborhood commercial center subject to the provisions of Chapter 17.26;

J. Residential development specifically designed for senior housing;

K. Mobile home parks in conformance with Section 17.32.040;

L. [Reserved.] M. Residential developments utilizing private streets in which the net lot area (lot area not including street area) meets or exceeds the site area prescribed by this article and in which the private streets are designed and constructed to meet or exceed public street standards;

N. Adult day care in excess of twelve (12) persons;

O. Duplexes on corner lots;

P. Twenty-four (24) hour residential care facilities or foster homes for more than six individuals in addition to the residing family;

Q. Residential structures and accessory buildings totaling more than ten thousand (10,000) square feet;

R. Other uses similar in nature and intensity as determined by the city planner.

S. Transitional or supportive housing for seven (7) or more resident/clients.

17.12.050 Site area.

The minimum site area shall be as follows:

Zone	Minimum Site Area
R-1-5	5,000 square feet
R-1-12.5	12,500 square feet
R-1-20	20,000 square feet

A. Each site shall have not less than forty (40) feet of frontage on the public street. The minimum width shall be as follows:

Zone	Interior Lot	Corner Lot
R-1-5	50 feet	60 feet
R-1-12.5	90 feet	100 feet
R-1-20	100 feet	110 feet

B. Minimum width for corner lot on a side on cul-de-sac shall be eighty (80) feet, when there is no landscape lot between the corner lot and the right of way.

17.12.060 One dwelling unit per site.

In the R-1 single-family residential zone, not more than one dwelling unit shall be located on each site, with the exception to Section 17.12.020(J).

17.12.070 Replacement and expansion of legally existing multiple family units.

In accordance with Sections 17.12.020 legally existing multiple family units may be expanded or replaced if destroyed by fire or other disaster subject to the following criteria:

A. A site plan review permit as provided in Chapter 17.28 is required for all expansions or replacements.

B. Replacement/expansion of unit(s) shall be designed and constructed in an architectural style compatible with the existing single-family units in the neighborhood. Review of elevations for replacement/expansion shall occur through the site plan review process. Appeals to architectural requirements of the site plan review committee shall be subject to the appeals process set forth in Chapter 17.28.050.

C. Setbacks and related development standards shall be consistent with existing single-family units in the neighborhood.

D. Parking requirements set forth in Section 17.34.020 and landscaping requirements shall meet current city standards and shall apply to the entire site(s), not just the replacement unit(s) or expanded area, which may result in the reduction of the number of units on the site.

E. The number of multiple family units on the site shall not be increased.

F. All rights established under Sections 17.12.020and 17.12.070 shall be null and void one hundred eighty (180) days after the date that the unit(s) are destroyed (or rendered uninhabitable) unless a building permit has been obtained and diligent pursuit of construction has commenced. The approval of a site plan review permit does not constitute compliance with this requirement.

17.12.080 Front yard.

A. The minimum front yard shall be as follows:

Zone	Minimum Front Yard
R-1-5	Fifteen (15) feet for living space and side-loading garages and twenty-two (22) feet for front-loading garages or other parking facilities, such as, but not limited to, carports, shade canopies, or porte cochere. A Porte Cochere with less than twenty-two (22) feet of setback from property line shall not be counted as covered parking, and garages on such sites shall not be the subject of a garage conversion.
R-1-12.5	Thirty (30) feet
R-1-20	Thirty-five (35) feet

B. On a site situated between sites improved with buildings, the minimum front yard may be the average depth of the front yards on the improved site adjoining the side lines of the site but need not exceed the minimum front yard specified above.

C. On cul-de-sac and knuckle lots with a front lot line of which all or a portion is curvilinear, the front yard setback shall be no less than fifteen (15) feet for living space and side-loading garages and twenty (20) feet for front-loading garages.

17.12.090 Side yards.

A. The minimum side yard shall be five feet in the R-1-5 and R-1-12.5 zone subject to the exception that on the street side of a corner lot the side yard shall be not less than ten feet and twenty-two (22) feet for front loading garages or other parking facilities, such as, but not limited to, carports, shade canopies, or porte cocheres.

B. The minimum side yard shall be ten feet in the R-1-20 zone subject to the exception that on the street side of a corner lot the side yard shall be not less than twenty (20) feet.

C. On a reversed corner lot the side yard adjoining the street shall be not less than ten feet.

D. On corner lots, all front-loading garage doors shall be a minimum of twenty-two (22) feet from the nearest public improvement or sidewalk.

E. Side yard requirements may be zero feet on one side of a lot if two or more consecutive lots are approved for a zero lot line development by the site plan review committee.

F. The placement of any mechanical equipment, including but not limited to, pool/spa equipment and evaporative coolers shall not be permitted in the five-foot side yard within the buildable area of the lot, or within five feet of rear/side property lines that are adjacent to the required side yard on adjoining lots. This provision shall not apply to street side yards on corner lots, nor shall it prohibit the surface mounting of utility meters and/or the placement of fixtures and utility lines as approved by the building and planning divisions.

17.12.100 Rear yard.

In the R-1 single-family residential zones, the minimum yard shall be twenty-five (25) feet, subject to the following exceptions:

A. On a corner or reverse corner lot the rear yard shall be twenty-five (25) feet on the narrow side or twenty (20) feet on the long side of the lot. The decision as to whether the short side or long side is used as the rear yard area shall be left to the applicant's discretion as long as a minimum area of one thousand five hundred (1,500) square feet of usable rear yard area is maintained. The remaining side yard to be a minimum of five feet.

B. Accessory structures not exceeding twelve (12) feet may be located in the required rear yard but not closer than three feet to any lot line provided that not more than twenty (20) percent of the area of the required rear yard shall be covered by structures enclosed on more than one side and not more than forty (40) percent may be covered by structures enclosed on only one side. On a reverse corner lot an accessory structure shall not be located closer to the rear property line than the required side yard on the adjoining key lot. An accessory structure shall not be closer to a side property line adjoining key lot and not closer to a side property line adjoining the street than the required front yard on the adjoining key lot.

C. Main structures may encroach up to five feet into a required rear yard area provided that such encroachment does not exceed one story and that a usable, open, rear yard area of at least one thousand five hundred (1,500) square feet shall be maintained. Such encroachment and rear yard area shall be approved by the city planner prior to issuing building permits.

17.12.110 Height of structures.

In the R-1 single-family residential zone, the maximum height of a permitted use shall be thirty-five (35) feet, with the exception of structures specified in Section 17.12.100(B).

17.12.120 Off-street parking.

In the R-1 single-family residential zone, subject to the provisions of Chapter 17.34.

17.12.130 Fences, walls and hedges.

In the R-1 single-family residential zone, fences, walls and hedges are subject to the provisions of Section 17.36.030.

17.12.135 Lot area less than 5,000 square feet.

A. Notwithstanding Section 17.12.050, lots in the R-1-5 zone may have a lot area of between 3,600 and 4,999 square feet if all of the following standards are met:

1. The Planning Commission finds that the development's overall density is consistent with the General Plan.

2. The maximum number of lots less than 5,000 square feet that may be approved by a tentative subdivision map shall be fifty (50) percent or less of the total lots.

3. Streets shall be constructed to public street standards.

4. Each subdivision with at least 15 lots that are less than 5,000 square feet in size shall make available to buyers at least three (3) different small lot floor plans with at least four (4) available elevation designs for each floor plan to construct on those lots.

5. The primary frontage of the dwelling unit shall face a public street, primary entryway, circulation walkway, or open space with sidewalks that provide delineated paths of travel.

6. The primary frontage of the dwelling unit shall include the primary entrance and at least one window.

7. Required covered parking spaces shall be in garages. Carports are prohibited.

8. The width of the garage shall not be greater than fifty (50) percent of the width of the dwelling unit.

9. The garage shall not extend beyond the front building facade (living area.)

10. All dwelling units shall include a covered front porch at least four (4) feet deep and six (6) feet wide or an uncovered front courtyard at least five (5) feet wide and five (5) feet deep that is surrounded on four sides by the dwelling unit or a wall or fence between three (3) and four (4) feet high with a pedestrian gate or entryway.

11. The building official shall not approve a building permit for a new dwelling unit on a lot with a lot area less than 5,000 square feet until the city planner, or designee, has determined that the standards identified in this section are met.

12. The subdivision shall provide a common, usable open space area of a minimum 3,000 square feet or two hundred fifty (250) square feet per lot under 5,000 square feet, whichever is greater. The area shall be landscaped and maintained with funding from either a homeowner's association or a landscape and lighting act district.

B. Notwithstanding this Chapter, lots with less than five thousand (5,000) square feet shall have the following minimum dimensions and building setback areas, unless they were approved with a planned development permit:

1. The minimum lot depth shall be seventy (70) feet.

2. The minimum lot width shall be forty-six (46) feet for interior lots and fifty-one (51) feet for corner lots.

3. The minimum front building setback area shall be twelve (12) feet for livable space and twenty (20) feet for garages.

4. The minimum rear yard building setback area shall be fifteen (15) feet.

5. The minimum interior side yard building setback area shall be five (5) feet.

6. The minimum corner side yard building setback area shall be ten (10) feet.

7. The maximum building height shall be thirty-five (35) feet.

8. Lots shall provide for a usable open space area of a minimum three hundred (300) square feet. The open space shall be a minimum fifteen (15) feet wide.

C. Lots less having a lot area of 3,600 square feet, or lots that do not meet the standards in this section may be approved through the planned development permit process per Chapter 17.26. (Ord. 2017-01 (part), 2017)

RESOLUTION NO. 2024-08

A RESOLUTION BY THE PLANNING COMMISSION OF THE CITY OF VISALIA RECOMMENDING APPROVAL OF ANNEXATION NO. 2024-01 AND DETACHMENT OF PROPERTY FROM COUNTY SERVICE AREA NO. 1, PERTAINING TO TWO PARCELS TOTALING 59.13 ACRES INTO THE CITY LIMITS OF VISALIA. UPON ANNEXATION, THE SITE SHALL BE ZONED R-1-5 (SINGLE-FAMILY RESIDENTIAL 5,000 SQUARE FOOT MINIMUM), WHICH IS CONSISTENT WITH THE GENERAL PLAN LAND USE DESIGNATION OF LOW DENSITY RESIDENTIAL. THE PROJECT SITE LOCATED WEST OF SOUTH ROEBEN STREET, APPROXIMATELY 650 FEET SOUTH OF WEST TULARE AVENUE (APNS: 087-010-006, 008).

WHEREAS, the project proponents approve to initiate proceedings for annexation to said city of territory described on the attached legal description included as Attachment “A” of this resolution; and

WHEREAS, the Planning Commission of the City of Visalia, after a duly published notice, did hold a public hearing on July 22, 2024, and

WHEREAS, the proponent desires to annex said territory to the City of Visalia for the following reasons: 1) The annexation will contribute to and facilitate orderly growth and development of both the City and the territory proposed to be annexed; 2) Will facilitate and contribute to the proper and orderly layout, design and construction of streets, gutters, sanitary and storm sewers and drainage facilities, both within the City and within the territory proposed to be annexed; and 3) Will provide and facilitate proper overall planning and zoning of lands and subdivision of lands in said City and said territory in a manner most conducive of the welfare of said City and said territory; and

WHEREAS, this proposal is made pursuant to the Cortese-Knox-Hertzburg Local Government Reorganization Act of 2000, commencing with Section 56000 of the Government Code of the State of California; and

WHEREAS, the territory proposed to be annexed is uninhabited; and

WHEREAS, the territory proposed to be annexed is located in Voting District 3 as identified in the Election District Map adopted by the City Council on February 22, 2022 per Resolution No. 2022-11; and

WHEREAS, the Planning Commission reviewed this proposal on July 22, 2024, and found it to be consistent with the General Plan; and

WHEREAS, an Initial Study was prepared which disclosed that no significant environmental impacts would result from this project with the incorporation of mitigation measures; and

WHEREAS, the Planning Commission hereby makes the following findings with regard to the project:

1. That the Annexation is consistent with the intent of the General Plan and Zoning Ordinance, and is not detrimental to the public health, safety, or welfare, or materially injurious to properties or improvements in the vicinity.
2. That the proposed Annexation, which will re-designate 59.13-acres of AE-20 (Agricultural Exclusive 20-acre) County zone district to an R-1-5 (Single-Family Residential, 5,000 square foot minimum site area) City zone district and will not impose new land uses or development that will adversely affect the subject site or adjacent properties.
3. That the parcel is not located within an Agricultural Preserve.
4. That the parcel will be annexed into Voting District 3 per the Council Election Voting District Map.
5. That an Initial Study was prepared for this project, consistent with CEQA, which disclosed that environmental impacts are determined to be not significant and that Mitigated Negative Declaration No. 2024-05 (State Clearinghouse 2024051257), is hereby adopted. Furthermore, the design of the subdivision and the proposed improvements are not likely to cause substantial environmental damage nor substantially and avoidably injure fish or wildlife or their habitat.

NOW, THEREFORE, BE IT RESOLVED that the Planning Commission recommends that the City Council adopt Mitigated Negative Declaration No. 2024-05 for Annexation No. 2024-01 that was prepared consistent with the California Environmental Quality Act and City of Visalia Environmental Guidelines.

NOW, THEREFORE, BE IT FURTHER RESOLVED that the Planning Commission of the City of Visalia recommends approval to the City Council of the Annexation described herein, subject to the following conditions:

1. Upon annexation, the territory shall be zoned R-1-5 (Single Family Residential, 5,000 square foot minimum site area), consistent with the pre-zoning designated by the General Plan Land Use Map.
2. That the applicant(s) enter into a Pre-Annexation Agreement with the City which memorializes the required fees, policies, and other conditions applicable to the annexation. The draft Pre-Annexation Agreement is attached herein as Attachment “B” of Resolution No. 2024-08. The agreement is subject to final approval by the City Council of the City of Visalia.

ATTACHMENT A

ANNEXATION NO. 2024-___

CITY OF VISALIA - EFFECTIVE:

THAT PORTION OF SECTION 34. T. 18 S., R. 24 E., M.D.B.&M., IN THE COUNTY OF TULARE, STATE OF CALIFORNIA

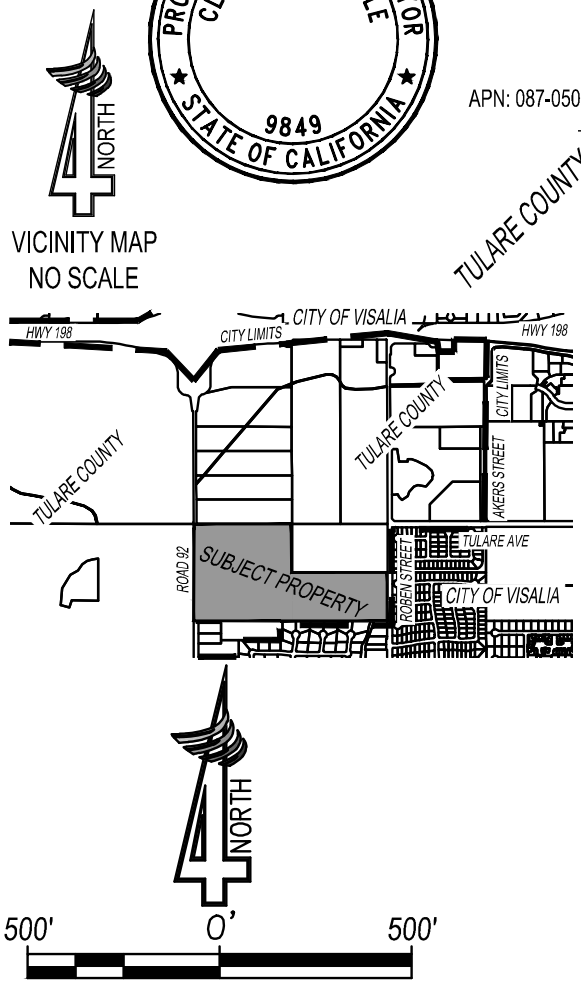
EXHIBIT "B"

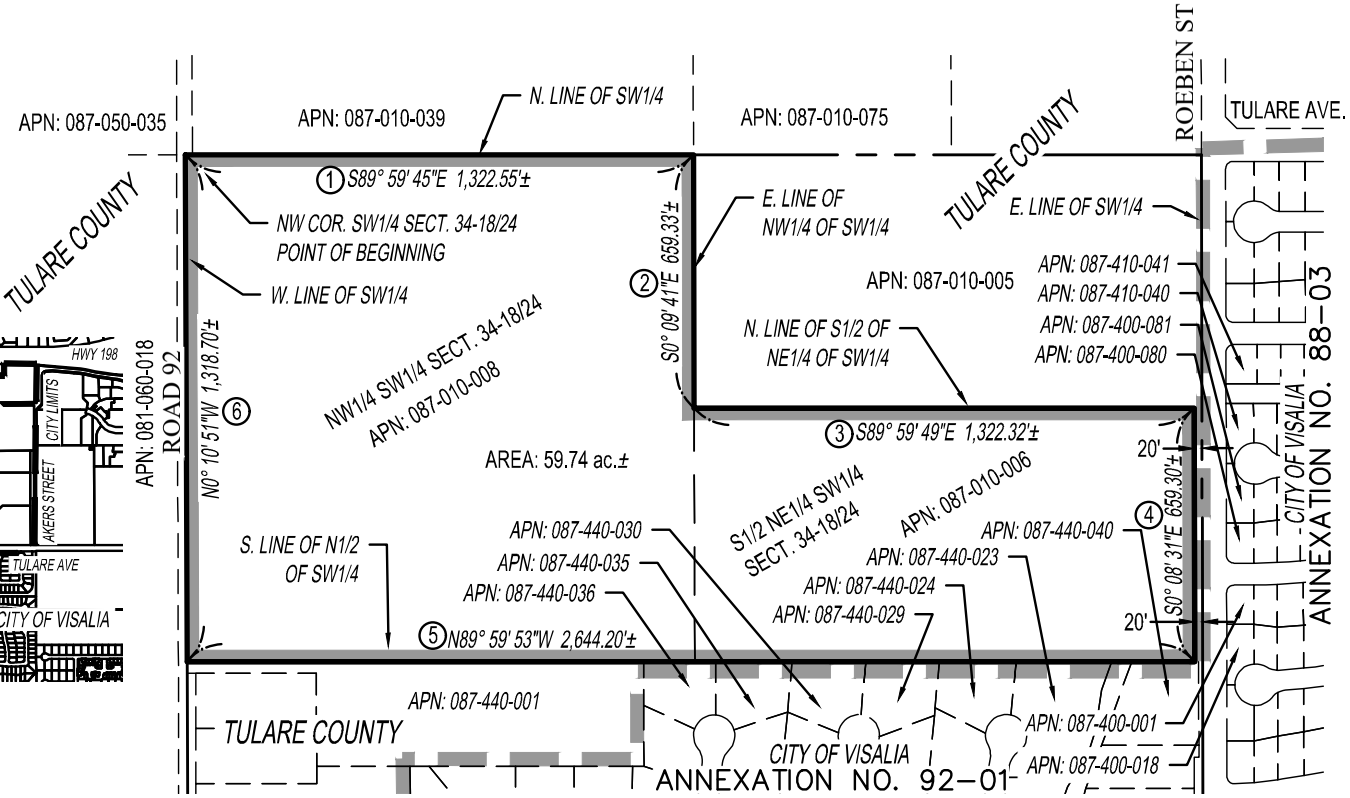
LEGEND

ANNEXATION BOUNDARY

EXISTING CITY LIMITS

PROFESSIONAL LAND SURVEYOR
CLINTON J. CAUDLE
9849
STATE OF CALIFORNIA





4CREEKS

324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

EXHIBIT “A”

CITY OF VISALIA

ANNEXATION NO. 2024-_____

That portion of the Northwest quarter of the Southwest quarter and that portion of the South Half of the Northeast quarter of the Southwest quarter of Section 34, Township 18 South, Range 24 East, Mount Diablo Base and Meridian, in the County of Tulare, State of California, being more particularly described as follows:

Beginning at the Northwest corner of the Southwest quarter of Section 34, Township 18 South, Range 24 East;

1. Thence South 89°59’45” East, along the North line of said Southwest quarter, 1322.55 feet more or less, to the Northeast corner of the Northwest quarter of said Southwest quarter;
2. Thence South 0°09’41” East, along the East line of the Northwest quarter of said Southwest quarter, 659.33 feet more or less, to the North line of the South half of the Northeast quarter of said Southwest quarter;
3. Thence South 89°59’49” East, along last said North line, 1322.32 feet more or less, to a line parallel with and 20 feet West of East line of said Southwest quarter, and existing City Limit line, being the West right-of-way line of Roeben Street;
4. Thence South 0°08’31” East, along said parallel line, and existing City Limit line, and said right-of-way line, 659.30 feet more or less, to the South line of the North half of said Southwest quarter;
5. Thence North 89°59’53” West, along said South line, and along the existing City Limit line and the Westerly prolongation thereof, 2644.20 feet more or less, to the Southwest corner of the Northwest quarter of said Southwest quarter;
6. Thence North 0°10’51” West, along the West line of said Southwest quarter, 1318.70 feet more or less, to the Northwest Corner of said Southwest quarter and the Point of Beginning;

Consisting of 59.74 acres more or less.

ONLY ONE SHEET

ATTACHMENT B

Pre-Annexation Agreement

This Pre-Annexation Agreement (”Agreement”) is made and entered into this ____ day of _____, 20___, by and among the City of Visalia, a charter law city (“City’) and Margaret Kenyon Elliott, (hereinafter “Owners”):

RECITALS

WHEREAS, Owners are the record owners of a portion of property, currently located in the unincorporated area of the County of Tulare, legally described in Exhibit A and depicted in Exhibit B, which are attached hereto and incorporated herein by reference (hereinafter referred to as the “Property”); and

WHEREAS, the Property is adjacent to and contiguous to the existing corporate boundary of the City, but is not situated within the limits of any municipality; and

WHEREAS, Owners desires to have the Property annexed to the City and to have the Property zoned as R-1-5 (Single Family Residential, 5,000 sq. ft. minimum), which would permit the Property to be used for Residential Low Density use; and

WHEREAS, the Property consists of approximately 59.13 acres, and no electors reside thereon; and

WHEREAS, proper applications have been filed with the City for approval of the annexation and tentative subdivision map as may be required for the Property; and

WHEREAS, the City has, by a resolution requesting initiation of proceedings to annex territory (“Resolution”) adopted on _____, 20__, initiated proceedings to annex the Property; and

WHEREAS, finding adoption of Resolution No. 20__-_____ initiating annexation requires entry into this Annexation Agreement prior to the City submitting an application to the Local Area Formation Commission to commence the proposed annexation; and

WHEREAS, Owners acknowledges that during the term of this Agreement the Property will be subject to all ordinances, resolutions, and other regulations of the City, as they may be amended from time to time, as well as state and federal statutes and regulations, as they may be amended.

WHEREAS, the City is authorized by its police powers to protect the health, safety and welfare of the community, and is entering into this Agreement and executing such authority for said purpose; and

WHEREAS, nothing contained in this Agreement shall constitute a waiver of the City's legislative, governmental, or police powers to promote and protect the health, safety and welfare of the City and its inhabitants, nor shall this Agreement prohibit the enactment or increase by town of any tax, fee, or charge.

NOW, THEREFORE, in consideration of the above Recitals and the following Covenants, it is agreed by and between the parties as follows:

I. AGREEMENT

A. Parties. The parties to this Agreement are the City and Owners.

B. Incorporation of Recitals. The parties confirm and incorporate the foregoing Recitals into this Agreement.

C. Purpose/Limits of Agreement. A specific purpose of this Agreement is to set forth specific terms and conditions of annexation of the Property to City.

II. TERMS AND CONDITIONS OF ANNEXATION; PURPOSE OF AGREEMENT

Generally, each party to this Agreement is benefited and burdened by detachment from the County and annexation to the City. Owners will obtain a variety of services from City and City will obtain additional tax revenues. City has adopted ordinances, regulations, and policies concerning design, improvement, construction, development and use of property within the City. Nothing contained in this Agreement shall constitute a waiver of City's legislative, governmental, or police powers to promote and protect the health, safety, and welfare of City and its inhabitants, nor shall this Agreement prohibit the enactment or increase by City of any tax or fee. The purpose of this Agreement is to spell out additional conditions to which Owners will be subject following annexation and prior to development within the City due to the burden placed on City by Owners desired annexation:

A. Water Acquisition Policy: Although City's current water service provider, California Water Service, continues to issue will-serve letters, City's Council is aware of the steadily decreasing level of water in the City's underground water aquifers and has determined that increasing development is contributing to this serious problem. Therefore, City's Council has studied the issue and investigated possible solutions in order that it may continue to assure citizens that there will be water available to serve the community's needs. City's Council is actively engaged in water replenishment activities with the Kaweah Delta Water Conservation District and it has adopted a policy, as set forth in Chapter 16.54 of the Visalia Municipal Code, which requires annexation applicants to convey title to water rights to City upon annexation and/or to pay a fee to City (pursuant to an adopted fee schedule) so that City may acquire water for groundwater replenishment and storage in order

to serve new development that comes with annexation, including development of the Property (the "Water Acquisition Policy"). Therefore, Owners agrees that, at the time that LAFCO issues a Certificate of Completion finalizing the annexation (and upon the running of all applicable statutes of limitation related thereto), Owners will comply with the Water Acquisition Policy by entering into an agreement with City to either (i) convey to City those water rights vested in the Property, if any, (ii) agree to pay City a fee in lieu thereof, (iii) agree to some combination of an in lieu fee payment and water right conveyance, or (iv) to comply by any other method allowed by the Water Acquisition Policy, provided that such agreement includes a condition precedent requiring City's water supplier to agree to serve the Property with potable water in amount sufficient to meet Owners reasonably anticipated total water demand for the Property, as determined by a valid water supply assessment prepared pursuant to California Water Code § 10910 *et seq*. No post-annexation permit or entitlement approvals concerning the Property will be issued by City unless and until Owners comply with the Water Acquisition Policy in a manner consistent with this subsection II(A). Owners agree that it shall identify all water rights which, to the best of Owners knowledge, have been used by Owners or its agents in connection with the Property, regardless of whether they are considered "vested" in the Property, and shall comply with the Water Acquisition Policy by entering into an agreement with City to convey such rights, if any, to City. City shall cooperate with Owners in valuing such water rights for the purposes of determining the amount of offset to be applied against the in-lieu fee as required pursuant of the Water Acquisition Policy. Owners further agrees that City shall have first right of refusal in acquiring upon mutually acceptable terms any water rights that Owners own that may be in addition to those required to meet Owners obligations under the Water Acquisition Policy. City agrees that water rights need not be conveyed and in lieu fees shall not be made payable until City's issuance of a building permit covering the Property and, in the event Owners apply to City for its approval of multiple building permits covering the Property, City agrees such water rights conveyance or fee payment obligation shall be allocated on a pro rata basis to each phase of development covered by each building permit, with conveyance of water rights or payment to be made on a per building permit basis upon City's issuance of each building permit covering the Property.

B. General Plan Maintenance Fee: On June 21, 2004, the City adopted (by Resolution 2004-63, as corrected) a General Plan Maintenance Fee. Owners agree that, at the time LAFCO issues a Certificate of Completion finalizing the annexation (and upon the running of all applicable statutes of limitation related thereto), Owners will enter into an agreement with City to pay the General Plan Maintenance Fee in an amount equal to $495 per acre and no post-annexation permit or entitlement approvals concerning the Property will be issued unless and until said agreement is executed. City agrees that such fee shall not be made payable until City's issuance of one or more building permits covering the Property and, in the event Owners apply to City for its approval of multiple

building permits covering the Property, City agrees such fee payment obligation shall be allocated on a pro rata basis to each phase of development covered by each building permit, with payment to be made on a per building permit basis upon City's issuance of each building permit covering the Property. Owners satisfaction of its obligations under this Section II(B) will satisfy any and all of Owners obligations related to and arising under the General Plan Maintenance Fee.

C. Plan For Providing Services. The parties agree to cooperate in, and to take such actions as may be necessary to ensure, the diligent preparation of a Plan For Providing Services to the Property, to be submitted to LAFCO along with City's annexation application, in accordance with Cortese-Knox-Hertzberg Act requirements.

Developer understands and agrees that building permits and other entitlements for development on the Property will not be issued unless and until each and every condition herein is met.

III. TERM

The term of this Agreement shall become effective when fully executed by the parties hereto (the "Effective Date") and continue for a period of twenty (20) years. This Agreement shall terminate if (a) the annexation proceedings are terminated for any reason; or (b) the completion of the annexation (recordation of a Certificate of Completion) does not occur on or before one (1) year from the Effective Date. Any indemnification provision included herewith shall survive termination and continue until expiration of the statute of limitations applicable to the subject matter thereof.

IV. DEFAULT, REMEDIES AND ENFORCEMENT

In the event of breach or default of any term, condition, covenant or obligation of this Agreement by either party, the other party may exercise any rights available at law or in equity, including an action for specific performance or other injunctive relief, and all such remedies shall be cumulative. This Agreement shall be enforceable, unless lawfully terminated or cancelled, by any party to the Agreement or any party's successor in interest, notwithstanding any subsequent changes in any applicable law adopted by the City which alters or amends the laws, ordinances, resolutions, rules or policies frozen by this Agreement.

V. INDEMNIFICATION

Owners agree to indemnify and hold harmless City and the City's officers, employees, agents, and contractors, from and against all liability, claims, causes of actions, and demands, including attorney's fees and court costs, which arise out of or are in any manner connected with this Agreement or its operation, or with any other action annexation or other action determined necessary or desirable by the City in order to effectuate the annexation of Owners property, or which are in any manner connected with the City's

enforcement of this Agreement. Owners further agree to investigate, handle, respond to, and to provide defense for and defend against or at the City's option to pay the attorney's fees and court costs, which arise out of or are in any manner connected with this Agreement or its operation.

VI. MISCELLANEOUS

a. Binding Effect/Covenants to Run With Land. The Parties hereto agree to be bound by this Agreement. This Agreement shall be binding upon and shall inure to the benefit of the heirs, transferees, successors and assigns of the parties hereto. The terms and conditions stated herein shall constitute covenants running with the land.

b. Assignment. Neither party shall assign, delegate or transfer their rights and duties in this Agreement without the written consent of the other party.

c. Authorized Signatory. The individuals executing this Agreement, by their signature hereto, declare that they are authorized to, and have the legal power, right and actual authority to bind the party to the terms and conditions of this Agreement.

d. Notices. All notices under this Agreement shall be effective upon personal delivery to City, or Owners, as the case may be, three (3) business days after deposit in the United States Mail, postage fully prepaid, addressed to the respective parties as follows:

To the City:
City Manager
City of Visalia
220 N. Santa Fe Street
Visalia, CA 93291

With Copy to:
Kenneth J. Richardson
City Attorney
Peltzer & Richardson
3746 West Mineral King
Visalia, CA 93291

To Owner:
Margaret Kenyon Elliott
16479 EFM 837
Frankston, TX 75763

San Joaquin Valley Homes
Attn: Steven Macias
5607 Avenida de los Robles
Visalia, CA 93291

Or such other address as the parties may from time to time designate by giving notice as required hereunder.

e. Entire Agreement. This Agreement represents the entire agreement between the City and Owners as to its subject matter and no prior oral or written understanding shall be of any force or affect.

f. Amendment. No part of this Agreement may be modified without the written consent of both parties.

g. Headings. Section headings are provided for organizational purposes only and do not in any manner affect the scope, meaning, or intent of the provisions under the heading.

h. No Third Party Beneficiaries Intended. Except as provided herein, the parties of this Agreement do not intend to provide any other party with any benefit or enforceable legal or equitable right or remedy.

i. Exhibits and Recitals. The recitals and any exhibits to this Agreement are fully incorporated by reference and are integral parts of this Agreement.

j. Conflict With Laws or Regulations/Severability. This Agreement is subject to all applicable laws and regulations. If any provision(s) of this Agreement is found by any court or other legal authority, or is agreed by the parties, to be in conflict with any code or regulation governing this subject, the conflicting provision(s) shall be considered null and void. If the effect of nullifying any conflicting provision is such that a material benefit of the Agreement to either party is lost, the Agreement may be terminated at the option of the effected party. In all other cases, the remainder of the Agreement shall continue in full force and effect.

k. Waiver. A waiver of any breech of this Agreement by any party shall not constitute a continuing waiver or a waiver of any subsequent breech of the same or any other provision of this Agreement.

l. Choice of Law - Venue. This Agreement shall be governed by the laws of the State of California and any questions arising hereunder shall be construed or determined according to such law. Venue for any legal action arising from or in connection with this Agreement or the Property shall be in Tulare County, California.

m. Attorneys Fees. In the event either party commences any action, arbitration or legal proceedings for the enforcement of this Agreement, the prevailing party, as determined by the court or arbitrator, shall be entitled to recovery of its reasonable fees and costs, including attorneys fees, court costs and arbitration costs incurred in the action brought thereon.

n. No Agency, Joint Venture or Partnership. It is understood that this Agreement is a contract that has been negotiated and voluntarily entered into by City and Owners and that Owners are not an agent of City. City and Owners hereby renounce the existence of any form of joint venture

or partnership between them, and agree that nothing contained herein or in any document executed in connection therewith shall be construed as making City and Owners joint venturers or partners.

o. Excusable Delays; Extension of Time of Performance. In the event of delays due to strikes, inability to obtain materials, civil commotion, fire, war, terrorism, lockouts, third-party litigation or other legal challenges regarding the annexation, riots, floods, earthquakes, epidemic, quarantine, freight embargoes, failure of contractors to perform, or other circumstances beyond the reasonable control of the parties and which cause substantially interferes with the ability of either party to perform its obligations under this Agreement, then the time for performance of any such obligation shall be extended for such period of time as the cause of such delay shall exist but in any event not longer than for such period of time.

p. Further Assurances. The parties will execute and deliver, upon demand by the other party, such further documents, instruments and conveyances, and shall take such further actions as such other party may request from time to time to document the transactions set forth herein.

q. Recordation of Agreement; Counterparts. This Agreement, or an abstract of its material terms and conditions shall be recorded by either party in the Official Records of the Tulare County Recorder. This Agreement may be executed in counterparts and, when all counterparts are combined, shall constitute a single agreement.

r. Future Development Impact Fees. The Owners hereby acknowledge that the City may, from time to time, adopt additional development impact fees at some time in the future after annexation of the Property. The Owners hereby agree that, in the event that the City adopts an ordinance imposing a development impact fee, in accordance with applicable legal requirements, prior to issuance of a vesting project approval for development of any portion of the Property, Owners will be subject to the requirements of such citywide development impact fee program to the extent applicable at the time Owners seek a vesting project approval for a project on the Property. This provision is not intended to retroactively subject the Property to additional annexation-related fees that may be adopted in the future.

s. Prezoning. City agrees to promptly process and, after City completes and adopts its environmental review, consider Owners application to prezone the Property, as required by the Cortese-Knox-Hertzberg Act's prezoning requirements. The R-1-5 (Single Family Residential, 5,000 sq. ft. minimum) zoning designation is the adopted prezonings for the Property, in accordance with Visalia Municipal Code Chapters 17.12 and Section 17.06.050(A), which section states that all territory which is annexed into the City shall be classified to the zone as indicated on the Visalia General Plan land use map, as adopted by the City (the "Prezoning"). The R-1-5

(Single Family Residential, 5,000 sq. ft. minimum) zoning designation permits residential land uses, as specified by the City of Visalia Municipal Code. Upon execution of this Agreement, City shall use its best efforts to (i) promptly complete its environmental review of the Project and consider its adoption thereof, and (ii) complete its preparation of the proposed prezoning contemplated by this subsection II(E) and consider its approval thereof. If City approves the prezoning contemplated by this subsection II(E), the terms and conditions of such prezoning shall be included in City's application to LAFCO for the annexation of the Property to City, which application shall promptly be submitted to LAFCO by City.

t. Development Impact Fees: The Owners shall pay all applicable development impact fees for any subsequent development on the Property at the time that building permits are issued, or prior to issuance of final occupancy, if applicable, at the discretion of the Community Development Director, or as may be required by ordinance. A list and amount of development impact fees can be located in the City's current version of the Development Fee Schedule.

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IN WITNESS WHEREOF, the parties have executed this Agreement on the date set forth next to their signature.

CITY

Date: _____ By: _____
Leslie Caviglia, City Manager

Attest:

Date: _____ By: _____
Michelle Nicholson, City Clerk

Approved as to Form:

Date: _____ By: _____
Kenneth J. Richardson, City Attorney

OWNERS

Date: _____ By: _____
_____
_____
_____
_____

Date: _____ By: _____
_____
_____
_____
_____

RESOLUTION NO 2024-07

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF VISALIA APPROVING ELLIOTT TENTATIVE SUBDIVISION MAP NO. 5597: A REQUEST TO SUBDIVIDE TWO PARCELS TOTALING APPROXIMATELY 59.13-ACRES INTO 225 LOTS FOR SINGLE-FAMILY RESIDENTIAL USE AND ADDITIONAL OUTLOTS FOR LANDSCAPING AND A NEIGHBORHOOD PARK, TO BE LOCATED WITHIN THE R-1-5 (SINGLE-FAMILY RESIDENTIAL, 5,000 SQUARE FOOT MINIMUM SITE AREA) ZONE. THE PROJECT SITE IS LOCATED WEST OF SOUTH ROEBEN STREET, APPROXIMATELY 650 FEET SOUTH OF WEST TULARE AVENUE (APNS: 087-010-006, 008)

WHEREAS, Elliott Tentative Subdivision Map No. 5597 is a request to to subdivide two parcels totaling approximately 59.13-acres into 225 lots for single-family residential use and additional outlots for landscaping and a neighborhood park. The project site is located west of South Roeben Street, approximately 650 feet south of West Tulare Avenue (APNs: 087-010-006, 008); and

WHEREAS, the Planning Commission of the City of Visalia, after duly published notice held a public hearing before said Commission on July 22, 2024; and

WHEREAS, the Planning Commission of the City of Visalia finds the tentative subdivision map in accordance with Chapter 16.16 of the Subdivision Ordinance of the City of Visalia, based on the evidence contained in the staff report and testimony presented at the public hearing; and

WHEREAS, an Initial Study was prepared which disclosed that no significant environmental impacts would result from this project with the incorporation of mitigation measures.

NOW, THEREFORE, BE IT RESOLVED that the Planning Commission hereby adopts Mitigated Negative Declaration No. 2024-05 (State Clearinghouse 2024051257) for Elliott Tentative Subdivision Map No. 5597 that was prepared consistent with the California Environmental Quality Act and City of Visalia Environmental Guidelines.

NOW, THEREFORE, BE IT FURTHER RESOLVED, that the Planning Commission of the City of Visalia approves the proposed tentative subdivision map based on the following specific findings and based on the evidence presented:

1. That the proposed location and layout of the Elliott Tentative Subdivision Map No. 5597, its improvements and design, and the conditions under which it will be maintained are consistent with the policies and intent of the General Plan, Zoning Ordinance, and Subdivision Ordinance. The 59.13-acre project site, which is the site of the proposed 225-lot single-family residential subdivision, is consistent with Land

Use Policy LU-P-21 of the General Plan. Policy LU-P-21 allows for the “annexation and development of residential, commercial, regional retail, and industrial land to occur within the Urban Development Boundary (Tier II) consistent with the City’s Land Use Diagram”.

2. That the proposed Elliott Tentative Subdivision Map No. 5597, its improvements and design, and the conditions under which it will be maintained will not be detrimental to the public health, safety, or welfare, nor materially injurious to properties or improvements in the vicinity, nor is it likely to cause serious public health problems. The proposed tentative subdivision map will be compatible with adjacent land uses. The project site is bordered by existing residential development, an arterial street, and two collector streets.

3. That the site is physically suitable for the proposed tentative subdivision map. The Elliott Tentative Subdivision Map No. 5597 is consistent with the intent of the General Plan, Zoning Ordinance, and Subdivision Ordinance, and is not detrimental to the public health, safety, or welfare or materially injurious to properties or improvements in the vicinity. The project site is adjacent to land zoned for residential development, and the subdivision establishes an arterial, collector, and local street pattern that will serve the subject site and the future development of vacant parcels located to the north and west of the subject site.

4. That the site is physically suitable for the proposed tentative subdivision map and the project’s density, which is consistent with the underlying Low Density Residential General Plan Land Use Designation. The proposed location and layout of the Elliott Tentative Subdivision Map No. 5597, its improvement and design, and the conditions under which it will be maintained is consistent with the policies and intent of the General Plan, Zoning Ordinance, and Subdivision Ordinance. The 59.13-acre project site, which is the site of the proposed 225-lot single-family residential subdivision, is consistent with Land Use Policy LU-P-21.

5. That the proposed Elliott Tentative Subdivision Map No. 5597, the design of the subdivision or the type of improvements will not conflict with easements, acquired by the public at large, for access through or use of, property within the proposed subdivision. The 225-lot subdivision is designed to comply with the City’s Engineering Improvement Standards for major streets. The development of the site with a 225-lot single-family residential subdivision will improve arterial and collector streets (South Roeben Street, West Tulare Avenue, and South Shirk Street), and extend local streets, infrastructure improvements, utilities, right-of-way improvements and a residential lot pattern consistent with existing residential development found in the area.

6. The proposed location of the tentative subdivision map is in accordance with the Visalia General Plan and the objectives of the Zoning and Subdivision Ordinances. The proposed location of the subdivision is in accordance with the objectives of the Zoning Ordinance and the purposes of the zone in which the site is located. Multiple General Plan policies identify the implementation of development standards to

ensure that new single-family residential development will contribute to positive land use compatibility. The size of the property combined with the number of residential lots proposed is consistent and compatible with existing surrounding residential development.

The proposed project will result in the creation of a new single-family residential development at a density of 3.8 units per acre, which is consistent with General Plan land use designation of Low Density Residential and the R-1-5 zoning designation that will be applied to the site when annexed into the city limits.

7. The Housing Accountability Act (GC section 66589.5) requires local agencies to approve housing developments that are consistent with applicable, objective general plan, zoning, and subdivision standards in effect at the time that the housing development project's application is determined to be complete. A local agency cannot disapprove a project or lower its density unless it finds by a preponderance of the evidence that the project would have a specific, adverse impact on public health or safety, and there is no feasible way to mitigate or avoid the impact. There is no evidence that the project would cause quantifiable significant unavoidable impacts on public health and safety. The project is consistent, compliant, and in conformity with the General Plan, Zoning Ordinance, and development standards.
8. That an Initial Study was prepared for this project, consistent with CEQA, which disclosed that environmental impacts are determined to be not significant and that Mitigated Negative Declaration No. 2024-05 (State Clearinghouse 2024051257), is hereby adopted. Furthermore, the design of the subdivision or the proposed improvements are not likely to cause substantial environmental damage nor substantially and avoidably injure fish or wildlife or their habitat.

BE IT FURTHER RESOLVED that the Planning Commission hereby approves Elliott Tentative Subdivision Map No. 5597 on the real property hereinabove described in accordance with the terms of this resolution under the provisions of Section 16.16.110 of the Ordinance Code of the City of Visalia, subject to the following conditions:

1. That the subdivision map be developed in substantial compliance with the comments and conditions of the Site Plan Review Committee as set forth under Site Plan Review No. 2023-131 incorporated herein by reference.
2. That the Elliott Tentative Subdivision Map No. 5597 be prepared in substantial compliance with the subdivision map in Exhibit "A".

3. That setbacks for the Elliott Tentative Subdivision Map No. 5597 shall be as follows:

Minimum Lot Area	Front	Side	Street Side	Rear
5,000 sq. ft.	15-ft. to habitable space. 22-ft. to garage, except on curvilinear lots 20-ft. to garage.	5-ft.	10-ft.	25-ft. City standard rear yard setbacks are 25 feet with allowance for one-story structure to go to 20-feet subject to open space requirements.

4. That approval of the Elliott Tentative Subdivision Map No. 5597 shall not become effective unless Annexation No. 2024-01, placing the project site within the corporate limits of the City of Visalia, is approved by the Tulare County Local Agency Formation Commission (LAFCO), and is fully executed to include all conditions contained in the Pre-Annexation Agreement for Annexation No. 2024-01.
5. That prior to the issuance of any residential building permit on the site, the applicant / developer shall obtain and provide the City with a valid Will Serve Letter from the California Water Service Company.
6. That the applicant shall consult with City of Visalia Engineering Development Division and Traffic Engineering Division and comply with any requirements for adequate design and improvement of the proposed local, collection, and arterial streets. The applicant shall redesign Street 6 to comply with the 60-foot width requirement for local streets.
7. That the applicant shall comply with the Tulare County Comprehensive Airport Land Use Plan and noise requirements therein prior to issuance of a building permit for the tentative subdivision map. This is subject to a requirement that, in areas where aircraft noise is expected to exceed 60dB CNEL, inhabited residential structures must meet California Noise Standards and be designed to achieve an interior noise level of 45 dB CNEL or less.
8. That the block walls located within the Landscape and Lighting District lots shall transition to three-foot height within the 15-foot front yard setback areas of the adjoining residential lots identified as Lots 49, 50, 63, 64, 105, and 135.
9. That a seven-foot-tall block wall shall be installed along the shared boundaries of Outlot E, Elliott Subdivision Lot 1, Savannah Heights Unit 3 Subdivision Lots 44 and 45 (1617 and 1618 South Jacques Court), and 1627 South Roeben Street (APN: 087-442-040). For Elliott Subdivision Lot 1, the block wall shall transition to a three-foot-tall block wall within the 15-foot front yard setback area. The walls shall also be maintained by the Lighting and Landscape District for the Elliott Tentative Subdivision Map No. 5597.
10. The applicant shall coordinate with the Persian Ditch Company and shall comply with all its requirements for the installation of improvements to the Persian Ditch within the project site.

11. The applicant shall comply with all requirements of Visalia Municipal Code Chapter 12.24 (Oak Tree Preservation), for the removal of any Valley Oak trees from the project site.

12. That the Mitigation Monitoring and Reporting Program and its mitigation measures adopted with the Initial Study / Mitigated Negative Declaration No. 2024-05 (State Clearinghouse 2024051257) and all conditions of the Elliott Tentative Subdivision Map No. 5597, including the following conditions in response to the Department of Toxic Substances Control (DTSC) comment letter be met during construction and upon final occupancy and ongoing operation of the project:

    - That prior to site disturbance, the developer/homebuilder shall consult with a qualified hazardous substance professional to determine whether the applicant should obtain soil samples to test for contaminants of concern (COCs), in particular Pesticides and Organochlorine Pesticides (OCPs) historically used on the property. If suggested to be performed, the developer/homebuilder shall have the qualified hazardous substances professional perform the soil sampling per Interim Guidance for Sampling Agricultural Properties from DTSC. The developer/homebuilder shall provide the Planning and Community Preservation Director with a copy of all correspondence between the developer/homebuilder and the qualified hazardous substances professional that details the required direction/recommendation on soil samples to test for COCs/OCPs. The City shall require the developer to comply with specified direction/recommendation as required prior to any further site disturbance.

    - All imported soil and fill material shall be tested to ensure that any contaminants are with DTSC's and the US Environmental Protection Agency's (USEPA's) Regional Screening Levels (RSLs).

13. That the applicant shall consult with the City of Visalia Parks and Recreation Department and shall comply with all requirements for development of the park on Outlot E, which will include designing and installing amenities for the future park.

14. That the temporary stormwater basin located on Lots 37 through 43, and Lots 186 and 187, shall be maintained onsite until a permanent regional ponding basin is established to service the development.

15. That the project be developed in substantial compliance with all improvements depicted and described in Exhibits "A" through "G".

16. That the developer shall inform and have future homeowners of the Elliott subdivision sign and acknowledge Tulare County's "Right to Farm" Ordinance. This informs future residential owners that the farming operations located to the north and west, which are located in Tulare County, are protected and cannot be declared a nuisance if operating in a manner consistent with proper and accepted customs and standards.

17. That all applicable federal, state, regional, and city policies and ordinances be met.

June 18, 2024

ELLIOT PROPERTY

TENTATIVE SUBDIVISION MAP

PREPARED FOR: SAN JOAQUIN VALLEY HOMES
5607 AVENIDA DE LOS ROBLES
VISALIA, CA 93291

PREPARED BY: 4CREEKS, INC.
324 S. SANTA FE ST., STE. A
VISALIA ,CA 93292

ACREAGE

59.13 AC *225 UNITS*

LEGEND

APN:	*087-010-006, 087-010-008*
ZONING:	*AGRICULTURE*
GENERAL PLAN:	*LOW DENSITY RESIDENTIAL*
FLOOD ZONE:	*AE & X*
ELECTRICITY:	*SOUTHEN CALIFORNIA EDISON COMPANY*
WATER:	*CALWATER*
TELEPHONE:	*AT&T*
NATURAL GAS:	*SOUTHERN CALIFORNIA GAS COMPANY*
EXISTING USE:	*VACANT*
PROP. USE:	*LOW DENSITY RESIDENTIAL*
PROP. MAINTENANCE:	*CITY OF VISALIA*
	LANDSCAPE SETBACK LOT
	MIN. 7' BLOCK WALL
	6' CHAIN LINK FENCE W/ PRIVACY SLATS
	PHASE LINE

TYPICAL LOT SIZES:

6480 SF MIN. LOTS± (60' X 108' TYP.) (225 UNITS)
**OUTLOTS A-E TO BE DEDICATED TO THE CITY OF VISALIA*

UTILITIES:

SEWER:	*SHIRK RD - EXIST. 6"* *ROEBEN ST - EXIST. 8"*
STORM DRAIN:	*TEMP. RETENTION BASIN TO MAINTAIN ALL ON-SITE DRAINAGE*
OVERHEAD POWER:	*ROEBEN ST (3 DISTRIBUTION, TO BE UNDERGROUNDED)* *SHIRK (5 TRANSMISSION, TO BE RELOCATED)*

APN 087-010-039
NOT A PART

APN 087-010-075
NOT A PART

APN 087-010-038
NOT A PART

APN 087-010-005
NOT A PART

W TULARE AVE
SECTION LINE

S SHIRK RD
SECTION LINE

S ROEBEN ST
SECTION LINE

EXIST. ROAD

ZONE "X"
ZONE "AE"

OUTLOT A 7111 S.F.
OUTLOT B 12328 S.F.
OUTLOT C 7783 S.F.
OUTLOT D 852 S.F.

AVENUE 1
AVENUE 2
AVENUE 3
AVENUE 4
AVENUE 5
AVENUE 6
AVENUE 7
AVENUE 8

STREET 1
STREET 2
STREET 3
STREET 4
STREET 5
STREET 6
STREET 7
STREET 8
STREET 9

PHASE 2
82 UNITS

PHASE 1
83 UNITS

PARK (OUTLOT E)
4.15 AC

TEMP. TURNAROUND

TEMP. POND TO BE CONSTRUCTED W/ PHASE 1

FENCE LINE ENCROACHES INTO PROPERTY, DEVELOPER TO ADDRESS AT THE TIME OF CONSTRUCTION

PERSIAN DITCH TO REMAIN. SEE CROSS SECTIONS FOR FENCING/ ACCESS ROAD DETAILS.

20' EXIST. ACCESS EASEMENT

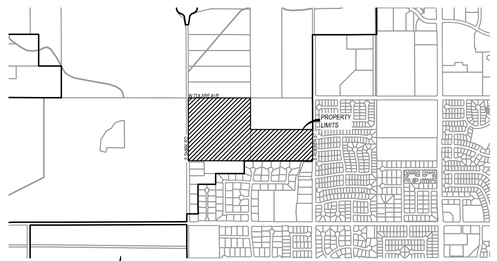
EXIST. PARCEL LINE

POWER POLE

TEMP. POND

(ACCOUNTS FOR 80 AC OF SFR)
(FUTURE LOTS 37-43, 186-187)

$V_{REQ'D.}$	9.73 AC-FT
$V_{PROP.}$	11 AC-FT
DEPTH	10'
SLOPE	3:1



VICINITY MAP

SCALE: 1"=1500'

NORTH

100' 0' 100'

EXHIBIT A

PREPARED BY:
4CREEKS
324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

ANNEXATION NO. 2024-___

CITY OF VISALIA - EFFECTIVE:

THAT PORTION OF SECTION 34. T. 18 S., R. 24 E., M.D.B.&M., IN THE COUNTY OF TULARE, STATE OF CALIFORNIA

EXHIBIT "B"

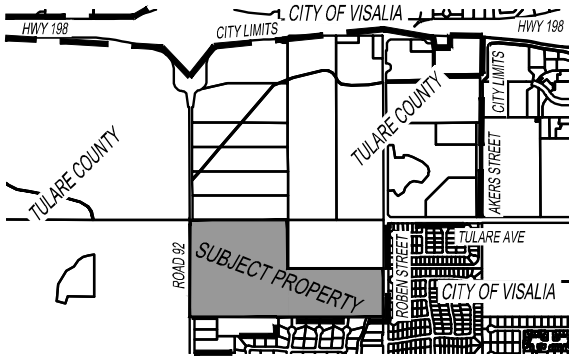
LEGEND

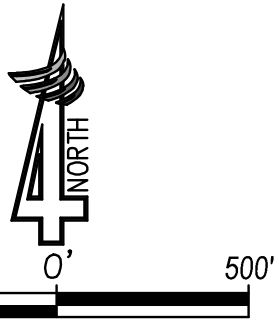
ANNEXATION BOUNDARY

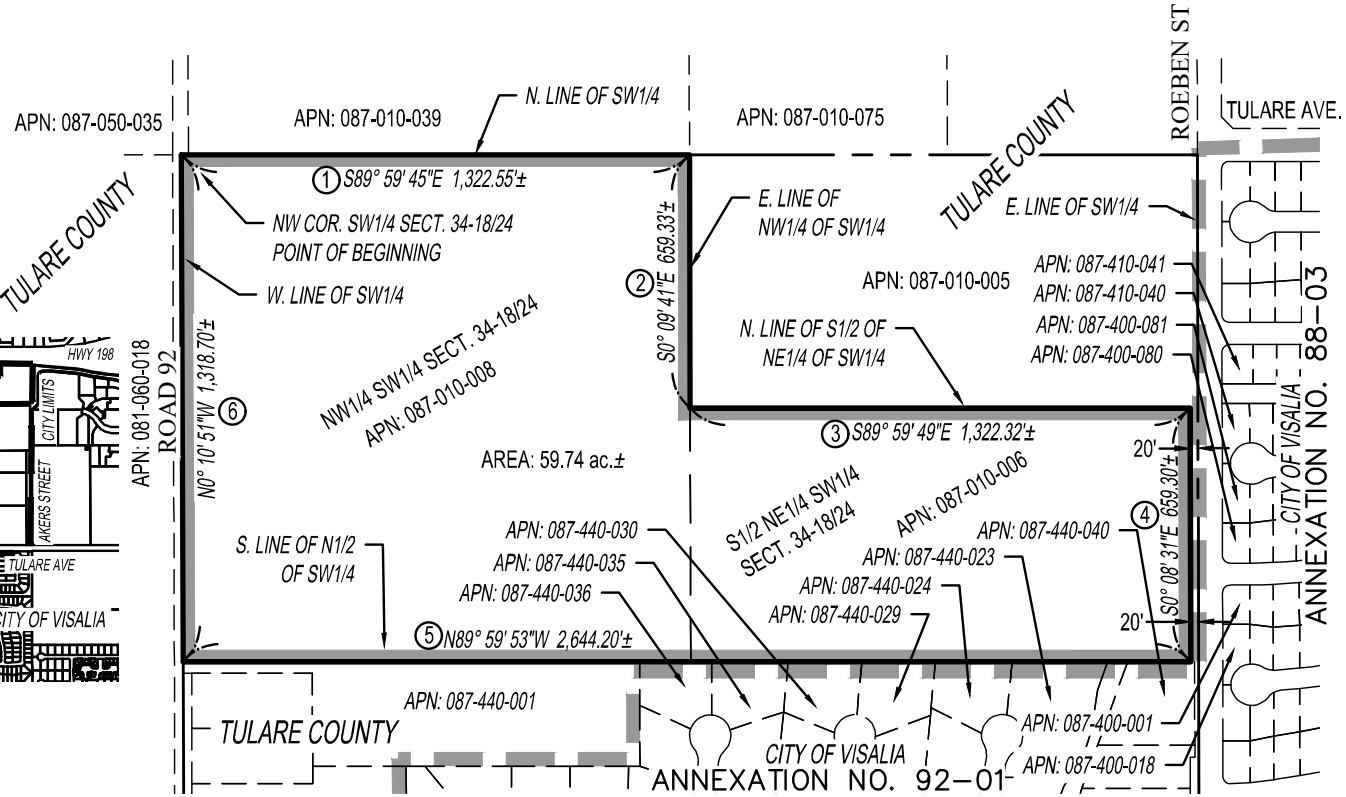
EXISTING CITY LIMITS

PROFESSIONAL LAND SURVEYOR
CLINTON J. CAUDLE
9849
STATE OF CALIFORNIA

VICINITY MAP
NO SCALE







4CREEKS

324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

EXHIBIT B

EXHIBIT “A”

CITY OF VISALIA

ANNEXATION NO. 2024-_____

That portion of the Northwest quarter of the Southwest quarter and that portion of the South Half of the Northeast quarter of the Southwest quarter of Section 34, Township 18 South, Range 24 East, Mount Diablo Base and Meridian, in the County of Tulare, State of California, being more particularly described as follows:

Beginning at the Northwest corner of the Southwest quarter of Section 34, Township 18 South, Range 24 East;

1. Thence South 89°59’45” East, along the North line of said Southwest quarter, 1322.55 feet more or less, to the Northeast corner of the Northwest quarter of said Southwest quarter;
2. Thence South 0°09’41” East, along the East line of the Northwest quarter of said Southwest quarter, 659.33 feet more or less, to the North line of the South half of the Northeast quarter of said Southwest quarter;
3. Thence South 89°59’49” East, along last said North line, 1322.32 feet more or less, to a line parallel with and 20 feet West of East line of said Southwest quarter, and existing City Limit line, being the West right-of-way line of Roeben Street;
4. Thence South 0°08’31” East, along said parallel line, and existing City Limit line, and said right-of-way line, 659.30 feet more or less, to the South line of the North half of said Southwest quarter;
5. Thence North 89°59’53” West, along said South line, and along the existing City Limit line and the Westerly prolongation thereof, 2644.20 feet more or less, to the Southwest corner of the Northwest quarter of said Southwest quarter;
6. Thence North 0°10’51” West, along the West line of said Southwest quarter, 1318.70 feet more or less, to the Northwest Corner of said Southwest quarter and the Point of Beginning;

Consisting of 59.74 acres more or less.

ONLY ONE SHEET

June 18, 2024

ELLIOT PROPERTY

PHASING EXHIBIT

PREPARED FOR: SAN JOAQUIN VALLEY HOMES
5607 AVENIDA DE LOS ROBLES
VISALIA, CA 93291

PREPARED BY: 4CREEKS, INC.
324 S. SANTA FE ST., STE. A
VISALIA ,CA 93292

ACREAGE

59.13 AC 225 UNITS

LEGEND

APN:	087-010-006, 087-010-008
ZONING:	AGRICULTURE
GENERAL PLAN:	LOW DENSITY RESIDENTIAL
FLOOD ZONE:	AE & X
ELECTRICITY:	SOUTHEN CALIFORNIA EDISON COMPANY
WATER:	CALWATER
TELEPHONE:	AT&T
NATURAL GAS:	SOUTHERN CALIFORNIA GAS COMPANY
EXISTING USE:	VACANT
PROP. USE:	LOW DENSITY RESIDENTIAL
PROP. MAINTENANCE:	CITY OF VISALIA
	LANDSCAPE SETBACK LOT
	MIN. 7' BLOCK WALL
	6' CHAIN LINK FENCE W/ PRIVACY SLATS
	PHASE LINE

TYPICAL LOT SIZES:
6480 SF MIN. LOTS± (60' X 108' TYP.) (225 UNITS)
*OUTLOTS A-E TO BE DEDICATED TO THE CITY OF VISALIA

UTILITIES:

SEWER:	SHIRK RD - EXIST. 6" ROEBEN ST - EXIST. 8"
STORM DRAIN:	TEMP. RETENTION BASIN TO MAINTAIN ALL ON-SITE DRAINAGE
OVERHEAD POWER:	ROEBEN ST (3 DISTRIBUTION, TO BE UNDERGROUNDED) SHIRK (5 TRANSMISSION, TO BE RELOCATED)

APN 087-010-039
NOT A PART

APN 087-010-075
NOT A PART

APN 087-010-038
NOT A PART

APN 087-010-005
NOT A PART

W TULARE AVE
SECTION LINE

S SHIRK RD
SECTION LINE

S ROEBEN ST
SECTION LINE

ZONE "X"
ZONE "AE"

ZONE "AE"
ZONE "X"

PHASE 2
142 UNITS

PHASE 1
83 UNITS

AVENUE 1
AVENUE 2
AVENUE 3
AVENUE 4
AVENUE 5
AVENUE 6
AVENUE 7
AVENUE 8
AVENUE 8

STREET 1
STREET 2
STREET 3
STREET 3
STREET 4
STREET 5
STREET 5
STREET 6
STREET 7
STREET 8
STREET 9

TEMP. POND TO BE CONSTRUCTED W/ PHASE 1

TEMP. POND
(ACCOUNTS FOR 80 AC OF SFR)
(FUTURE LOTS 37-43, 186-187)

$V_{REQ'D.}$	9.73 AC-FT
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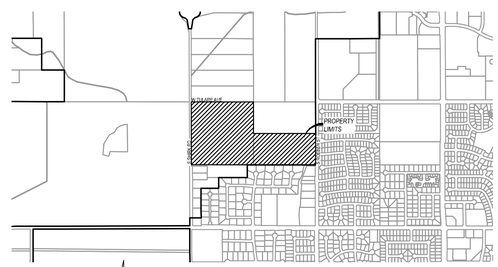

VICINITY MAP
SCALE: 1"=1500'

NORTH
100' 0' 100'

EXHIBIT C

PREPARED BY:
4CREEKS
324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

June 18, 2024

ELLIOT PROPERTY

ATYPICAL LOT EXHIBIT

PREPARED FOR: SAN JOAQUIN VALLEY HOMES
5607 AVENIDA DE LOS ROBLES
VISALIA, CA 93291

PREPARED BY: 4CREEKS, INC.
324 S. SANTA FE ST., STE. A
VISALIA ,CA 93292

ACREAGE

59.13 AC 225 UNITS

LEGEND

APN:	087-010-006, 087-010-008
ZONING:	AGRICULTURE
GENERAL PLAN:	LOW DENSITY RESIDENTIAL
FLOOD ZONE:	AE & X
ELECTRICITY:	SOUTHEN CALIFORNIA EDISON COMPANY
WATER:	CALWATER
TELEPHONE:	AT&T
NATURAL GAS:	SOUTHERN CALIFORNIA GAS COMPANY
EXISTING USE:	VACANT
PROP. USE:	LOW DENSITY RESIDENTIAL
PROP. MAINTENANCE:	CITY OF VISALIA
	LANDSCAPE SETBACK LOT
	MIN. 7' BLOCK WALL
	6' CHAIN LINK FENCE W/ PRIVACY SLATS
	PHASE LINE

TYPICAL LOT SIZES:
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OVERHEAD POWER:	ROEBEN ST (3 DISTRIBUTION, TO BE UNDERGROUNDED) SHIRK (5 TRANSMISSION, TO BE RELOCATED)

APN 087-010-039
NOT A PART

APN 087-010-075
NOT A PART

APN 087-010-038
NOT A PART

APN 087-010-005
NOT A PART

W TULARE AVE
SECTION LINE

S SHIRK RD
SECTION LINE

S ROEBEN ST
SECTION LINE

AVENUE 1
AVENUE 2
AVENUE 3
AVENUE 4
AVENUE 5
AVENUE 6
AVENUE 7
AVENUE 8
AVENUE 8

STREET 1
STREET 2
STREET 3
STREET 3
STREET 4
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STREET 6
STREET 7
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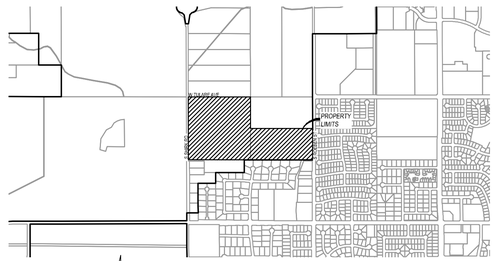
STREET 9



VICINITY MAP
SCALE: 1"=1500'

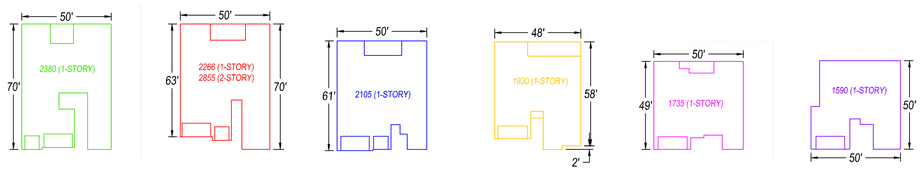
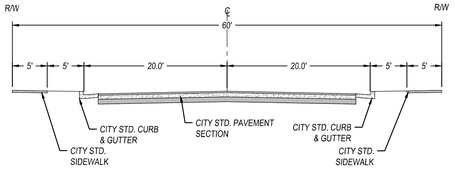


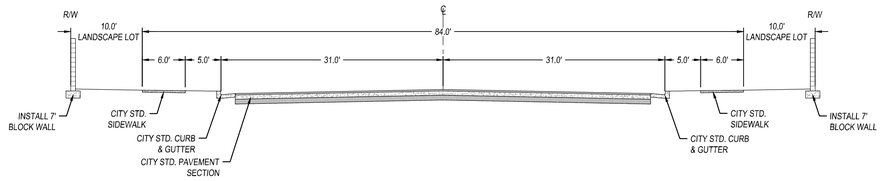
EXHIBIT D

NORTH
100' 0' 100'

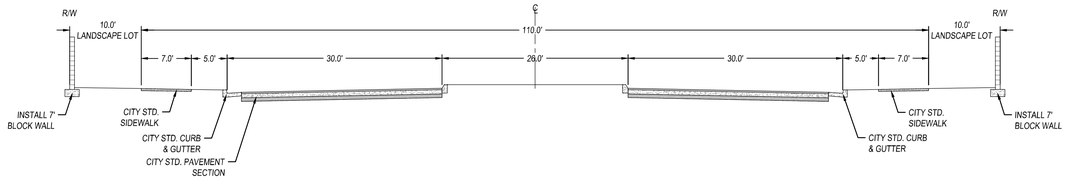
PREPARED BY:
4CREEKS
324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com



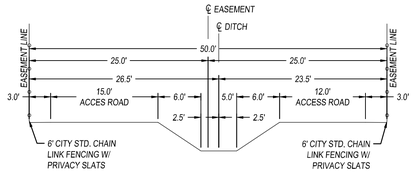
TYPICAL INTERNAL



TUARE AVE & ROEBEN ST



SHIRK RD



PERSIAN DITCH

EXHIBIT E

June 18, 2024

ELLIOT PROPERTY

CROSS SECTIONS

PREPARED FOR: SAN JOAQUIN VALLEY HOMES
5607 AVENIDA DE LOS ROBLES
VISALIA, CA 93291

PREPARED BY: 4CREEKS, INC.
324 S. SANTA FE ST., STE. A
VISALIA ,CA 93292

ACREAGE

59.13 AC 225 UNITS

LEGEND

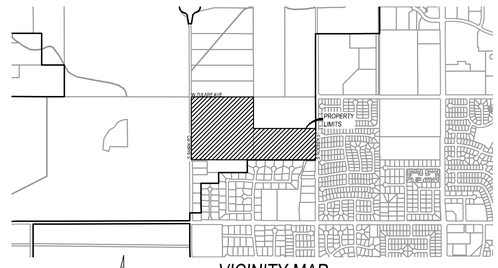
APN:	087-010-006, 087-010-008
ZONING:	AGRICULTURE
GENERAL PLAN:	LOW DENSITY RESIDENTIAL
FLOOD ZONE:	AE & X
ELECTRICITY:	SOUTHEN CALIFORNIA EDISON COMPANY
WATER:	CALWATER
TELEPHONE:	AT&T
NATURAL GAS:	SOUTHERN CALIFORNIA GAS COMPANY
EXISTING USE:	VACANT
PROP. USE:	LOW DENSITY RESIDENTIAL
PROP. MAINTENANCE:	CITY OF VISALIA
	LANDSCAPE SETBACK LOT
	MIN. 7' BLOCK WALL
	6' CHAIN LINK FENCE W/ PRIVACY SLATS
	PHASE LINE

TYPICAL LOT SIZES:

6480 SF MIN. LOTS± (60' X 108' TYP.) (225 UNITS)
*OUTLOTS A-E TO BE DEDICATED TO THE CITY OF VISALIA

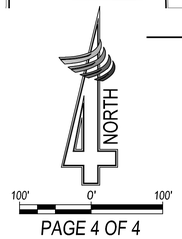
UTILITIES:

SEWER:	SHIRK RD - EXIST. 6" ROEBEN ST - EXIST. 8"
STORM DRAIN:	TEMP. RETENTION BASIN TO MAINTAIN ALL ON-SITE DRAINAGE
OVERHEAD POWER:	ROEBEN ST (3 DISTRIBUTION, TO BE UNDERGROUNDED) SHIRK (5 TRANSMISSION, TO BE RELOCATED)



VICINITY MAP

SCALE: 1"=1500'



PREPARED BY:
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324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

ELLIOTT PROPERTY

PROJECT DETAILS

LOCATION	CITY OF VISALIA
APN	087-010-006, 087-010-008
TOTAL AREA	59.13 AC
EXISTING ZONING	AGRICULTURE
PROPOSED ZONING	LOW DENSITY RESIDENTIAL
PROPOSED LAND USE	LOW DENSITY RESIDENTIAL
TYPICAL LOT SIZE	6,480 SF (60' X 108')
TOTAL LOTS	225
PHASING	
PHASE 1	83 UNITS
PHASE 2	142 UNITS

NOT A PART

NOT A PART

NOT A PART

W TULARE ROAD

S SHIRK ROAD

S ROEBEN STREET

FLOOD ZONE X
FLOOD ZONE AE

PHASE 2
PHASE 1

PARK
4.15 AC

PERSIAN DITCH

ACCESS ROAD

CHAIN LINK FENCING

EXHIBIT F

1''=100'

N

4CREEKS

EXHIBIT G

Elliott Subdivision

Project Narrative

APPLICANT/DEVELOPER:

San Joaquin Valley Homes
Contact Person: Nicolas Peters
5607 Avenida de los Robles
Visalia, California 93291
(559) 732-2660

PROJECT OBJECTIVE:

Elliott Subdivision proposes low-density single-family homes and a 4.15-acre park on 59.13 gross acres within the City of Visalia Planning Area.

DESCRIPTION:

Elliott Subdivision will feature 225 single-family residential units, with an average lot size of 8,082 SF. The lot sizes range from a minimum of 6,376 SF to a maximum of 12,774 SF.

- **Phase 1:** Includes Lots 1-83 with 1- and 2-story homes ranging from 1,735 to 2,855 SF.
- **Phase 2:** Includes Lots 84-225 with 1-story homes ranging from 1,735 to 2,105 SF, excluding Lots 90-100 and Lot 152, which will have 2-story homes ranging from 1,735 to 2,855 SF.

The project includes a 4.15-acre park (Outlot E) with the Persian Ditch fenced off within the park area. The park will be dedicated to the City of Visalia and maintained via a Landscape and Lighting District, with no proposed amenities at this time.

The project's existing land use designation under the City of Visalia General Plan is Residential Low Density. The current County of Tulare zoning designation is AE-20 (Exclusive Agriculture, 20-acre minimum site area), and the proposed zoning under city jurisdiction is R-1-5 (Single Family Residential, 5,000 square foot minimum site area).

INFRASTRUCTURE IMPROVEMENTS:

The project will include onsite and offsite infrastructure improvements, such as new and relocated utilities, new residential streets, and improvements to West Tulare Avenue, South Roeben Street, and South Shirk Road. A retention basin will be located in the southwest corner of the project site to manage all on-site drainage.

TYPICAL LOT SIZES:
6,480± SF minimum (60' X 108')

DENSITY:
3.8 DU/AC

OUTLOT SIZES:

Outlot A - 7,111 SF
Outlot B – 12,328 SF
Outlot C – 7,783 SF
Outlot D – 852 SF
Outlot E – 4.15 AC

Outlots A-E To Be Dedicated to The City of Visalia

REQUIRED APPROVALS:

- Annexation into the City of Visalia

Environmental Document No. 2024-05
City of Visalia Community Development

CITY OF VISALIA
315 E. ACEQUIA AVENUE
VISALIA, CA 93291

NOTICE OF A PROPOSED INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

Project Title: Annexation No. 2024-01 and Elliott Tentative Subdivision Map No. 5597

Project Description:
Annexation No. 2024-01 is a request by Jonathan Frausto/San Joaquin Valley Homes to annex two parcels totaling approximately 59.13-acres into the City Limits of Visalia and to detach said parcels from Tulare County Service Area No. 1.

The Elliott Tentative Subdivision Map No. 5597 is a request by Jonathan Frausto/San Joaquin Valley Homes to subdivide two parcels totaling approximately 59.13-acres into 225 lots for single-family residential use and additional outlots for landscaping and a neighborhood park.

The development of the property, if approved, will create additional housing units in the southwest portion of the City at a density of 3.8 dwelling units to the gross acre within the Low Density Residential designation area, which is consistent with the Visalia General Plan.

Project Location: The project site is located west of South Roeben Street, approximately 650 feet south of West Tulare Avenue (APNs: 087-010-006 and 087-010-008).

Contact Person: Cristobal Carrillo, Associate Planner, Phone: (559) 713-4443, Email: cristobal.carrillo@visalia.city

Pursuant to City Ordinance No. 2388, the Environmental Coordinator of the City of Visalia has reviewed the proposed project described herein and has found that the project will not result in any significant effect upon the environment because of the reasons listed below:

Reasons for Mitigated Negative Declaration: Initial Study No. 2024-05 has identified environmental impact(s) that may occur because of the project; however, with the implementation of mitigation measures identified, impact(s) will be reduced to a level that is less than significant.

Copies of the initial study and other documents relating to the subject project may be examined by interested parties at the Planning Division in City Hall East, at 315 East Acequia Avenue, Visalia, CA. In the event that City Hall front counter services are closed to the public, copies of the initial study and other documents relating to the subject project may be requested by contacting project planner Cristobal Carrillo, Associate Planner, by phone at (559) 713-4443 or by email at cristobal.carrillo@visalia.city or by visiting the following webpage:

https://www.visalia.city/depts/community_development/planning/ceqa_environmental_review.asp

Comments on this proposed Mitigated Negative Declaration will be accepted from June 27, 2024 to July 17, 2024.

Date June 27, 2024

Signed: 

Brandon Smith, AICP Environmental Coordinator
City of Visalia

Initial Study and Mitigated Negative Declaration for Elliott Subdivision

June 2024



Prepared By:

4Creeks, Inc.
324 S Santa Fe, Suite A
Visalia, CA 93292

Prepared For:

City of Visalia
315 E Acequia Ave
Visalia, CA 93291

TABLE OF CONTENTS

Section 1: Initial Study/MND Process **1-1**
1.1 California Environmental Quality Act Guidelines 1-1
1.2 Initial Study 1-1
1.3 Environmental Checklist 1-2
1.4 Notice of Intent to Adopt a Negative Declaration/Notice of Preparation 1-2
1.5 Mitigated Negative Declaration 1-3
1.6 Intended Uses of the Environmental Assessment, Initial Study 1-3
1.7 Notice of Determination 1-4
1.8 CEQA Process Flow Chart 1-5

Section 2: Project Description **2-1**
2.1 Project Description & Purpose 2-1
2.2 Project Location 2-1
2.3 Other Permits and Approvals 2-1

Section 3: Evaluation of Environmental Impacts **3-1**
3.1 Purpose 3-1
3.2 Initial Study/Mitigated Negative Declaration 3-3
3.3 Evaluation of Environmental Impacts 3-8
3.4 Environmental Factors Potentially Affected 3-11
3.5 Environmental Analysis 3-12
I. Aesthetics 3-12
II. Agriculture and Forest Resources 3-20
III. Air Quality 3-29
IV. Biological Resources 3-39
V. Cultural Resources 3-50
VI. Energy 3-58
VII. Geology and Soils 3-63
VIII. Greenhouse Gas Emissions 3-71
IX. Hazards and Hazardous Materials 3-77
X. Hydrology and Water Quality 3-84
XI. Land Use and Planning 3-92
XII. Mineral Resources 3-97
XIII. Noise 3-99
XIV. Population and Housing 3-105
XV. Public Services 3-107
XVI. Parks and Recreation 3-111
XVII. Transportation 3-114
XVIII. Tribal Cultural Resources 3-122
XIX. Utilities and Service Systems 3-130

XX. Wildfire 3-136
XX. Mandatory Findings of Significance 3-138
3.6 Mitigation Monitoring and Reporting Program 3-140
3.7 Supporting Information and Sources 3-146

Section 4: List of Report Preparers 4-1

Appendices

Appendix A: CalEEMod Report
Appendix B: Biological Evaluation
Appendix C: Cultural Resources Assessment
Appendix D: Traffic Study/VMT Assessment
Appendix E: Agricultural Mitigation Memo
Appendix F: Biochemical Oxygen Demand and Total Suspended Solids Calculations

List of Figures

2-1 Regional Location 2-3
2-2 Vicinity Map 2-4
3-1 Site Plan 3-7
3-2 Phasing Map 3-8
3-3 Important Farmland Map 3-26
3-4 Soils Map 3-66
3-5 Distance to Schools and Airports 3-80
3-6 City of Tulare General Plan Land Use 3-94
3-7 Zoning Map 3-95
3-8 Construction Related Noise Levels 3-102
3-9 Visalia Existing VMT Per Capita – First Parcel 3-119
3-10 Visalia Existing VMT Per Capita – Second Parcel 3-120

List of Tables

3-1 Important Farmland Developed Under 2030 GP 3-26
3-2 San Joaquin Valley Attainment Status 3-30
3-3 Ambient Air Quality Standards 3-32
3-4 SJVAPCD Thresholds of Significance – Criteria Pollutants 3-35
3-5 Projected Project Emissions for Criteria Pollutants related to Construction 3-37
3-6 Projected Project Emissions for Criteria Pollutants related to Operations 3-37
3-7 Special Status Species Findings 3-42
3-8 SCE and State Average Power Resources 3-58
3-9 On-Road Mobile Fuel Use Generated from Construction 3-61
3-10 On-Road Mobile Fuel Use Generated from Operation 3-61
3-11 Greenhouse Gases 3-72
3-12 Projected Project Operational GHG Emissions 3-75

3-13 Project Consistency with Climate Action Plan Strategies 3-75
3-14 City of Visalia Noise Standards 3-100
3-15 Noise Levels of Noise-Generating Equipment 3-102
3-16 Vibration Levels Generated by Construction Equipment 3-103
3-17 Student Generation Rates 3-110
3-18 Proposed Project Trip Generation 3-116

Section 1

Initial Study/Negative Declaration Process

City of Visalia
315 E Acequia Ave
Visalia, CA 93291

SECTION 1
CEQA Review Process

Project Title: Elliott Subdivision

1.1 California Environmental Quality Act Guidelines

Section 15063 of the California Environmental Quality Act (CEQA) Guidelines requires that the Lead Agency prepare an Initial Study to determine whether a discretionary project will have a significant effect on the environment. All phases of the project planning, implementation, and operation must be considered in the Initial Study. The purposes of an Initial Study, as listed under Section 15063(c) of the CEQA Guidelines, include:

(1) Provide the lead agency with information to use as the basis for deciding whether to prepare an EIR or negative declaration;
(2) Enable an applicant or lead agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the project to qualify for a negative declaration;
(3) Assist in the preparation of an EIR, if one is required, by:
- *(a) Focusing the EIR on the effects determined to be significant,*
- *(b) Identifying the effects determined not to be significant,*
- *(c) Explaining the reasons for determining that potentially significant effects would not be significant, and*
- *(d) Identifying whether a program EIR, tiering, or another appropriate process can be used for analysis of the project's environmental effects.*

(4) Facilitate environmental assessment early in the design of a project;
(5) Provide documentation of the factual basis for the finding in a negative declaration that a project will not have a significant effect on the environment
(6) Eliminate unnecessary EIRs;
(7) Determine whether a previously prepared EIR could be used with the project.

1.2 Initial Study

The Initial Study provided herein covers the potential environmental effects of a 225-unit, low-density single-family development on 59.13 gross acres within the City of Visalia Planning Area. The Project site's existing City of Visalia General Plan land use designation is Residential Low Density, with a current County of Tulare zoning designation of AE-20 (Exclusive Agriculture, 20 acre minimum site area). The Project's proposed zoning under City jurisdiction is R-1-5 (Single Family Residential, 5,000 square foot minimum site area). The Project includes 225 homes, with

a minimum of 6,480 square feet per lot, and a 4.15-acre park. The City of Visalia will act as the Lead Agency for processing the Initial Study/Mitigated Negative Declaration under the CEQA Guidelines.

1.3 Environmental Checklist

The Lead Agency may use the CEQA Environmental Checklist Form [CEQA Guidelines, Section 15063(d)(3) and (f)] in preparation of an Initial Study to provide information for determining if there are significant effects of the project on the environment. A copy of the completed Environmental Checklist is outlined in **Section Three**.

1.4 Notice of Intent to Adopt a Negative Declaration

The Lead Agency shall provide a Notice of Intent to Adopt a Negative Declaration (CEQA Guidelines, Section 15072) to the public, responsible agencies, trustee agencies, and the County Clerk within which the project is located, sufficiently before adoption by the Lead Agency of the Negative Declaration to allow the public and agencies the review period. The public review period (CEQA Guidelines, Section 15105) will be 20 days. The City is not anticipating state agency review.

Before approving the project, the Lead Agency shall consider the proposed Negative Declaration together with any comments received during the public review process and shall adopt the proposed Negative Declaration only if it finds based on the whole record before it, that there is no substantial evidence that the project will have a significant effect on the environment and that the Negative Declaration reflects the Lead Agency's independent judgment and analysis.

The written and oral comments received during the public review period will be considered by The City of Visalia before adopting the Negative Declaration. Regardless of the type of CEQA document that must be prepared, the overall purpose of the CEQA process is to:

1) Assure that the environment and public health and safety are protected in the face of discretionary projects initiated by public agencies or private concerns;
2) Provide full disclosure of the project's environmental effects to the public, the agency decision-makers who will approve or deny the project, and the responsible trustee agencies charged with managing resources (e.g. wildlife, air quality) that may be affected by the project; and
3) Provide a forum for public participation in the decision-making process on potential environmental effects.

According to Section 15070(a) a public agency shall prepare or have prepared a proposed negative declaration for a project subject to CEQA when:

The initial study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment. Less than significant impacts with mitigation measures have been identified.

The Environmental Checklist Discussion contained in Section Three of this document has determined that the environmental impacts of the project are less than significant with mitigation measures and that a Mitigated Negative Declaration is adequate for adoption by the Lead Agency.

1.5 Negative Declaration or Mitigated Negative Declaration

The Lead Agency shall prepare or have prepared a proposed Negative Declaration or Mitigated Negative Declaration (CEQA Guidelines Section 15070) for a project subject to CEQA when the Initial Study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment. The proposed Negative Declaration or Mitigated Negative Declaration circulated for public review shall include the following:

(a) A brief description of the project, including a commonly used name for the project.
(b) The location of the project, preferably shown on a map.
(c) A proposed finding that the project will not have a significant effect on the environment.
(d) An attached copy of the Initial Study documenting reasons to support the finding.
(e) Mitigation measures, if any.

1.6 Intended Uses of Initial Study/Negative Declaration Documents

The Initial Study/Negative Declaration document is an informational document that is intended to inform decision-makers, other responsible or interested agencies, and the general public of the potential environmental effects of the proposed project. The environmental review process has been established to enable public agencies to evaluate environmental consequences and to examine and implement methods of eliminating or reducing any adverse impacts. While CEQA requires that consideration be given to avoiding environmental damage, the Lead Agency must balance any potential environmental effects against other public objectives, including economic and social goals. The City of Visalia, as the Lead Agency, will make a determination, based on the environmental review for the Environmental Study, Initial Study, and comments from the general public, if there are less than significant impacts from the proposed project and the requirements of CEQA can be met by adoption of a Mitigated Negative Declaration.

1.7 Notice of Determination (NOD)

The Lead Agency shall file a Notice of Determination within five working days after deciding to approve the project. The Notice of Determination (CEQA Guidelines, Section 15075) shall include the following:

(1) An identification of the project including the project title as identified on the proposed negative declaration, its location, and the State Clearinghouse identification number for the proposed negative declaration if the notice of determination is filed with the State Clearinghouse.

(2) A brief description of the project.

(3) The agency's name and the date on which the agency approved the project.

(4) The determination of the agency that the project will not have a significant effect on the environment.

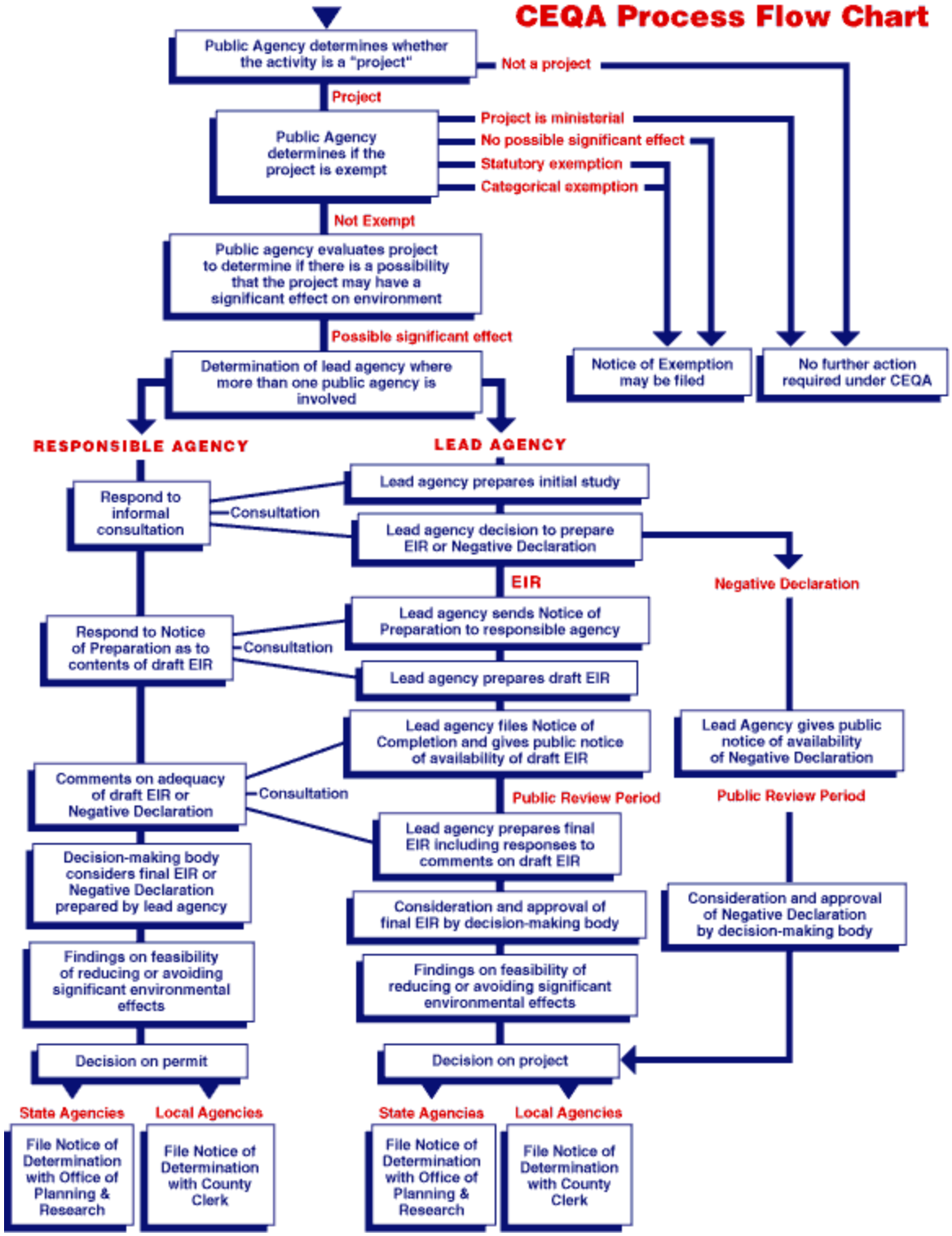
(5) A statement that a negative declaration or a mitigated negative declaration was adopted pursuant to the provisions of CEQA.

(6) A statement indicating whether mitigation measures were made a condition of the approval of the project, and whether a mitigation monitoring plan/program was adopted.

(7) The address where a copy of the negative declaration or mitigated negative declaration may be examined.

(8) The identity of the person undertaking a project which is supported, in whole or in part, through contracts, grants, subsidies, loans, or other forms of assistance from one or more public agencies or the identity of the person receiving a lease, permit, license, certificate, or other entitlement for use from one or more public agencies.

1.8 CEQA Process Flow Chart



Section 2

Project Description

City of Visalia
315 E Acequia Ave
Visalia, CA 93291

SECTION 2
Project Description

Project Title: Elliott Property Subdivision

2.1 Project Description and Purpose

The Project proposes a 225-unit, low-density single-family development on 59.13 gross acres within the City of Visalia Planning Area. The Project site's existing City of Visalia General Plan land use designation is Residential Low Density, with a current County of Tulare zoning designation of AE-20 (Exclusive Agriculture, 20 acre minimum site area). The Project's proposed zoning under City jurisdiction is R-1-5 (Single Family Residential, 5,000 square foot minimum site area). The Project includes 225 homes, with a minimum of 6,480 square feet per lot, and a 4.15-acre park.

The Project would result in onsite and offsite infrastructure improvements, including new and relocated utilities, new residential streets, and improvements of West Tulare Avenue, South Roeben Street, and South Shirk Road. The Persian Ditch will remain, fenced off within the park area. The Project will require no demolition.

The Project will require annexation into the City of Visalia; it is within the Visalia Planning Area and borders the existing City limits and single-family homes. The Project plans to develop the project in two phases (Figure 3-2).

2.2 Project Location

The proposed project site is located within the City of Visalia Planning Area within Tulare County. The site is west of S Roeben Street, east of S Shirk Road, and south of W Tulare Avenue. The site is approximately 3.5 miles southwest of the Visalia downtown. The Project involves construction on APNs 087-010-006 and 087-010-008. The site is topographically flat, with agricultural uses to the north and west and single-family housing to the south and east. The site contains agricultural uses, vacant land, and an oak grove.

2.3 Other Permits and Approvals

The following approvals are required for the proposed Project:

- Tentative Subdivision Map

- Tulare County Local Agency Formation Commission Annexation
- San Joaquin Valley Air Pollution Control District (SJVAPCD). The proposed Project is within the jurisdiction of the SJVAPCD and will be required to comply with Rules VIII, 3135, 4101, and 9510.
- Central Valley Regional Water Quality Control Board, SWPPP. The proposed project site is within the jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB). The Central Valley RWQCB will require a Storm Water Pollution Prevention Plan (SWPPP) to prevent impacts related to stormwater because of project construction.

The following ministerial approvals are required from the City of Visalia for the proposed Project:

- City of Visalia Building and Encroachment Permits
- Roadway Dedication of Shirk Road, Roeben Street, and Tulare Avenue.

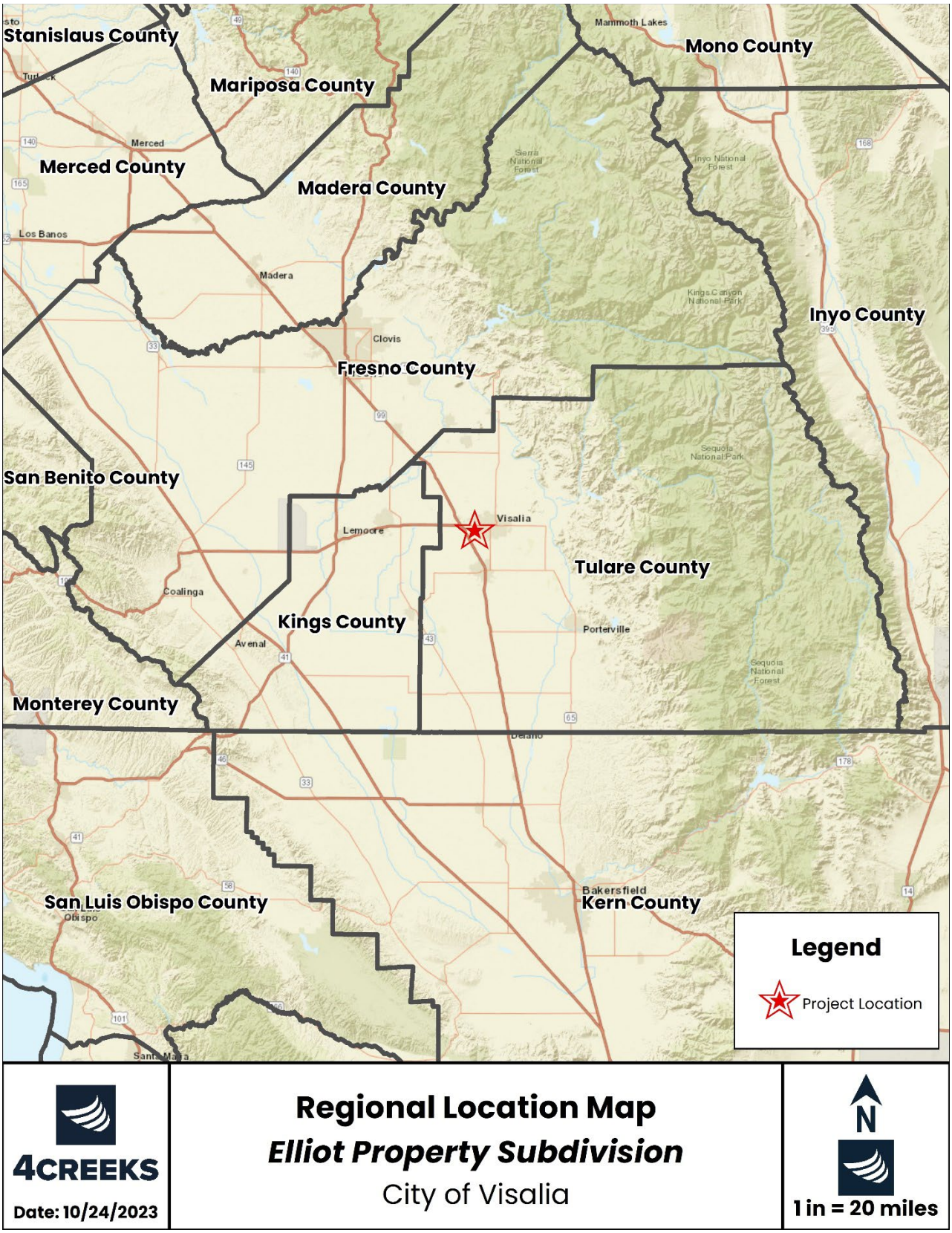


Figure 2-1. Regional Location Map

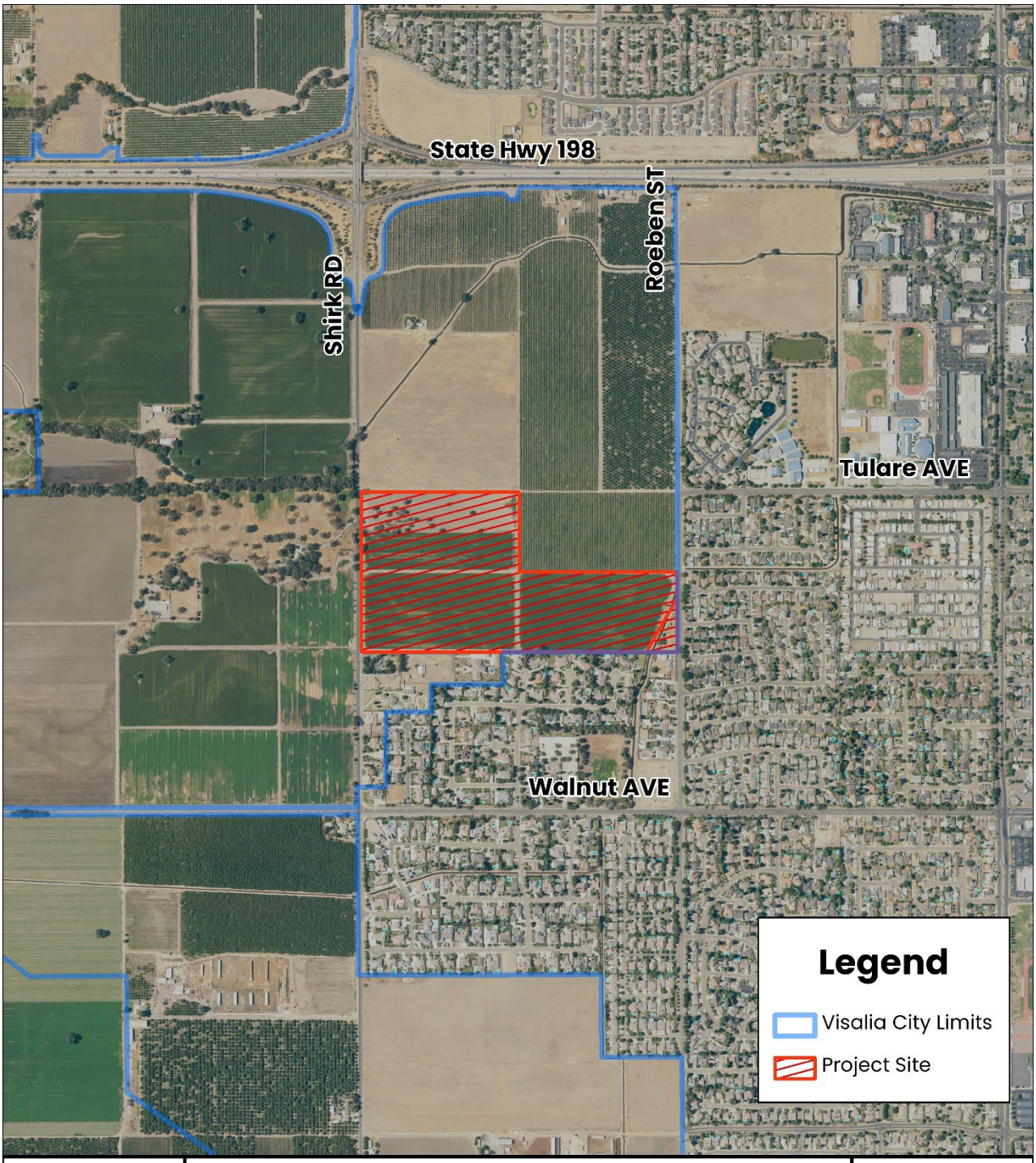


Figure 2-2. Vicinity Map

Section 3

Evaluation of Environmental Impacts

City of Visalia
315 E Acequia Ave
Visalia, CA 93291

SECTION 3
Evaluation of Environmental Impacts

Project Title: Elliott Property Subdivision

This document is the Initial Study/Mitigated Negative Declaration for the proposed construction and operation of 225-unit, low-density single-family development with a park on 59.13 gross acres within the City of Visalia. The City of Visalia will act as Lead Agency for this Project pursuant to the California Environmental Quality Act (CEQA) and the CEQA Guidelines.

3.1 PURPOSE

The purpose of this environmental document is to implement the California Environmental Quality Act (CEQA). Section 15002(a) of the CEQA Guidelines describes the basic purposes of CEQA as follows.

(1) Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
(2) Identify the ways that environmental damage can be avoided or significantly reduced.
(3) Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
(4) Disclose to the public the reasons why a governmental agency approved the Project in the manner the agency chose if significant environmental effects are involved.

This Initial Study of environmental impacts has been prepared to conform to the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations Section 15000 et seq.). According to Section 15070, a public agency shall prepare or have prepared a proposed negative declaration or mitigated negative declaration for a Project subject to CEQA when:

(a) The initial study shows that there is no substantial evidence, in light of the whole record before the agency, that the Project may have a significant effect on the environment, or
(b) The initial study identifies potentially significant effects, but:
(1) Revisions in the Project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released

for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and

(2) There is no substantial evidence, in light of the whole record before the agency, that the Project as revised may have a significant effect on the environment.

3.2 INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

1. **Project Title:** Elliott Property Subdivision

2. **Lead Agency:** City of Visalia, Planning and Community Preservation Department
   Contact Person: Cristobal Carrillo, Planning Division
   315 E Acequia Ave
   Visalia, CA 93291
   Phone Number: (559) 713-4443

3. **Applicant:** San Joaquin Valley Homes
   Contact Person: Nick Peters
   5607 Avenida De Los Robles
   Visalia, CA 93291
   Phone Number: (559)-437-5010

4. **Project Location:** The proposed Project Site is located within the City of Visalia Planning Area within Tulare County. The Site is west of S Roeben Street, east of S Shirk Road, and south of Tulare Street. The Site is approximately 3.5 miles southwest of the Visalia downtown. The Project involves construction on APNs 087-010-006 and 087-010-008. The Site is topographically flat, with agricultural uses to the north and west and single-family housing to the south and east. The Site is zoned AE-20 (Exclusive Agriculture, 20 Acre Minimum Site Area) by Tulare County but will be zoned R-1-5 by the City of Visalia, pending annexation. The Visalia General Plan Designation is Low Density Residential. The Site contains agricultural uses, vacant land, and an oak grove.

5. **General Plan Designation:** The proposed Project Site is designated as Low Density Residential by the Visalia General Plan.

6. **Zoning Designation:** The Site is currently zoned AE-20 in the County of Tulare Designation.

7. **Project Description:** The Project proposes a 225-unit, low-density single-family development on 59.13 gross acres within the City of Visalia Planning Area. The Project site's existing City of Visalia General Plan land use designation is Residential Low Density, with a current County of Tulare zoning designation of AE-20 (Exclusive Agriculture, 20-acre minimum site area). The Project's proposed zoning under City jurisdiction is R-1-5 (Single Family Residential, 5,000 square foot minimum site area). The Project includes 225 homes, with a minimum of 6,480 square feet per lot, and a 4.15-acre park.

   The Project would result in onsite and offsite infrastructure improvements, including new and relocated utilities, new residential streets, and improvements of West Tulare Avenue,

South Roeben Street, and South Shirk Road. The Persian Ditch will remain, fenced off, in the park area. within the park area. The Project will require no demolition.

8. **Surrounding Land Uses and Settings:**

Direction	*Adjacent Street*	*Adjacent Property Usage*
North	None (Future West Tulare Street)	Agricultural and Irrigated Pasture
South	None	Residential
East	South Roeben Street	Residential
West	South Shirk Road	Rural Residence and Agricultural

9. **Required Approvals:** The following approvals are required for the proposed project:
   - Tentative Subdivision Map
   - Tulare County Local Agency Formation Commission Annexation
   - San Joaquin Valley Air Pollution Control District (SJVAPCD). The proposed Project is within the jurisdiction of the SJVAPCD and will be required to comply with Rule VIII, 3135, 4101, and 9510.
   - Central Valley Regional Water Quality Control Board, SWPPP. The proposed Project Site is within the jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB). The Central Valley RWQCB will require a Storm Water Pollution Prevention Plan (SWPPP) to prevent impacts related to stormwater because of Project construction.

The following ministerial approvals are required from the City of Visalia for the proposed project:

- City of Visalia Building and Encroachment Permits
- Roadway Dedication of Shirk Road, Roeben Street, and Whitendale Avenue

10. **Native American Consultation:** The State requires lead agencies to consider the potential effects of proposed projects and consult with California Native American tribes during the local planning process for the purpose of protecting Traditional Tribal Cultural Resources through the California Environmental Quality Act (CEQA) Guidelines. Pursuant to PRC Section 21080.3.1, the lead agency shall begin consultation with the California Native American tribe that is traditionally and culturally affiliated with the geographical area of the proposed project. Such significant cultural resources are either sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a tribe which is either on or eligible for inclusion in the California Historic Register or local historic register, or, the lead agency, at its discretion, and support by substantial evidence, choose to treat the resources as a Tribal Cultural Resources (PRC Section 21074(a)(1-2)). According to the most recent census data, California is home to 109 currently recognized Native American tribes. Tribes in California currently have nearly 100 separate reservations or Rancherias. Tulare County has several Rancherias. These Rancherias are not located within the City limits.

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and Project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See PRC Section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per PRC Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that PRC Section 21082.3(c) contains provisions specific to confidentiality.

11. **Parking and access:** Vehicular access to the Project is available via S Shirk Road, S Roeben Street, and the future expansion of W Tulare Road to the north of the Project. The Project includes new streets and courts that provide full access to the Project site. These internal streets will have a ROW of 60', including sidewalks and parkways on both sides. Improvements will be made to Shirk Road, Tulare Avenue, and Roeben Street. The Right of Way (ROW) of Shirk Road will have an ultimate ROW of 110' with a center median, with the Project providing the eastern half of improvements. The eastern half of Shirk Road will include two lanes of traffic, a bike lane, a sidewalk, and landscaping. The ROW of S. Roeben Street will have an ultimate ROW of 84'. The Project will build out the western half of Roeben Street to include a southbound lane of traffic, sidewalk, bike lane, and landscaping. Tulare Avenue, currently a dirt road to the north of the Project, will have an ultimate ROW of 84', with the Project providing the southern half of improvements, including new pavement for an eastbound lane of traffic, a bike lane, a sidewalk, and landscaping. During construction, workers will utilize existing parking areas and/or temporary construction staging areas for parking vehicles and equipment.

12. **Landscaping and Design:** The landscape and design plans will be required during building permit and final map submittal for any areas maintained by a landscape and lighting district.

13. **Utilities and Electrical Services:** The Project would result in onsite and offsite infrastructure improvements including new and relocated utilities. Electricity will be provided by Southern California Edison, telephone will be provided by AT&T, and natural gas will be provided by Southern California Gas. Water will be provided by Cal Water and sewer services will be provided by the City of Visalia via existing lines. A stormwater pond will be located in the Southwest corner of the site. During construction, a temporary stormwater basin will be utilized.

Acronyms

BMP	Best Management Practices
BAU	Business as Usual
CAA	Clean Air Act
CBC	California Building Code
CCAP	Climate Change Action Plan
CCR	California Code of Regulation
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CRHR	California Register of Historic Places
CWA	California Water Act
DHS	Department of Health Services
FEIR	Final Environmental Impact Report
FMMP	Important Farmland Mapping and Monitoring Program
ISMND	Initial Study Mitigated Negative Declaration
ISR	Indirect Source Review
MCL	Maximum Contaminant Level
MEIR	Master Environmental Impact Report
NOI	Notice of Intent
ND	Negative Declaration
NAC	Noise Abatement Criteria
RCRA	Resource Conservation and Recovery Act of 1976
ROW	Right-of-Way
RWQCB	Regional Water Quality Control Board
SCE	Southern California Edison
SHPO	State Historic Preservation Office
SJVAPCD	San Joaquin Valley Air Pollution Control District
SSJVIC	Southern San Joaquin Information Center
SWPPP	Storm Water Pollution Prevention Plan
TCR	Tribal Cultural Resource
UWMP	Urban Water Management Plan

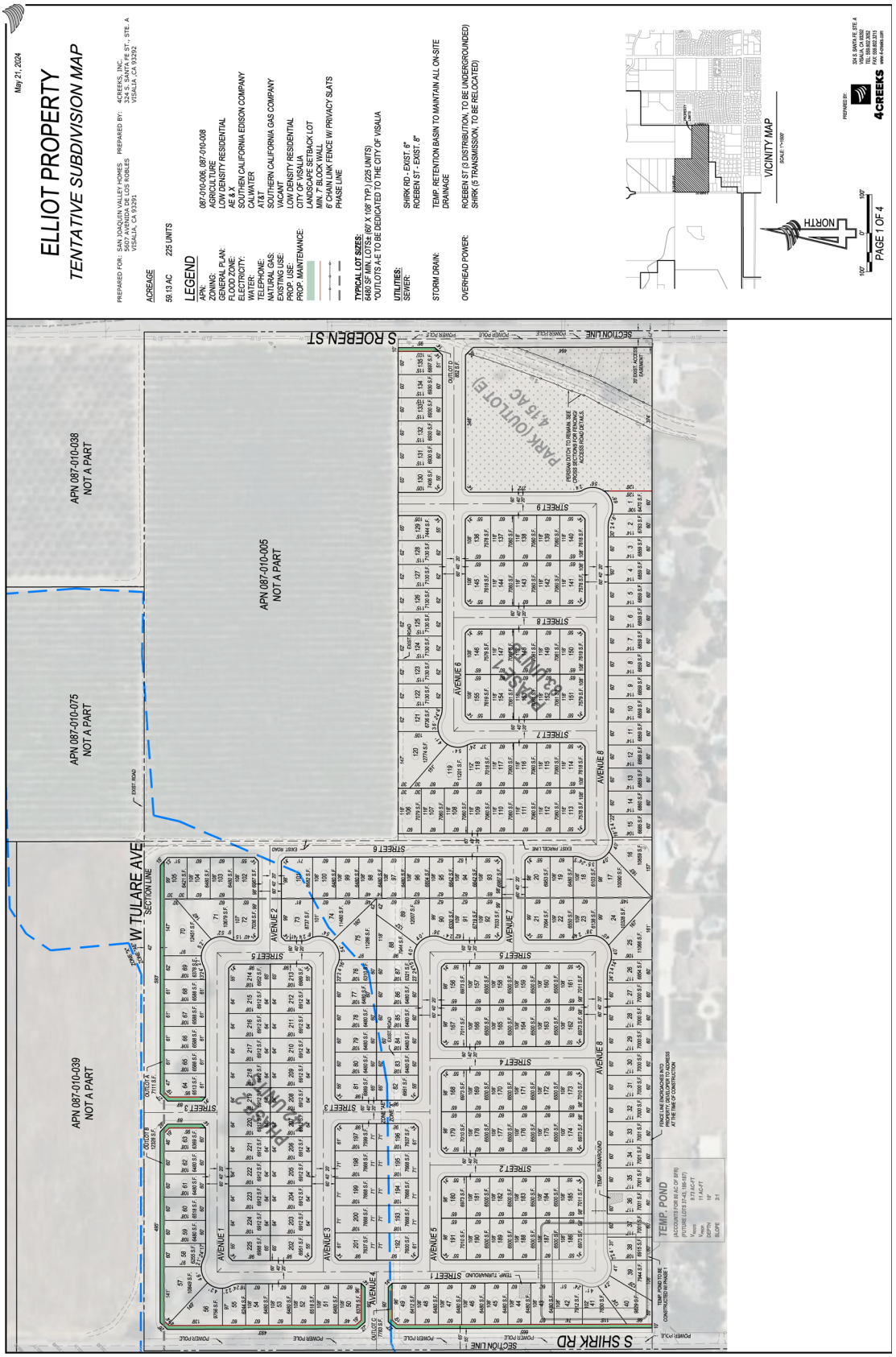


Figure 3-1: Site Plan

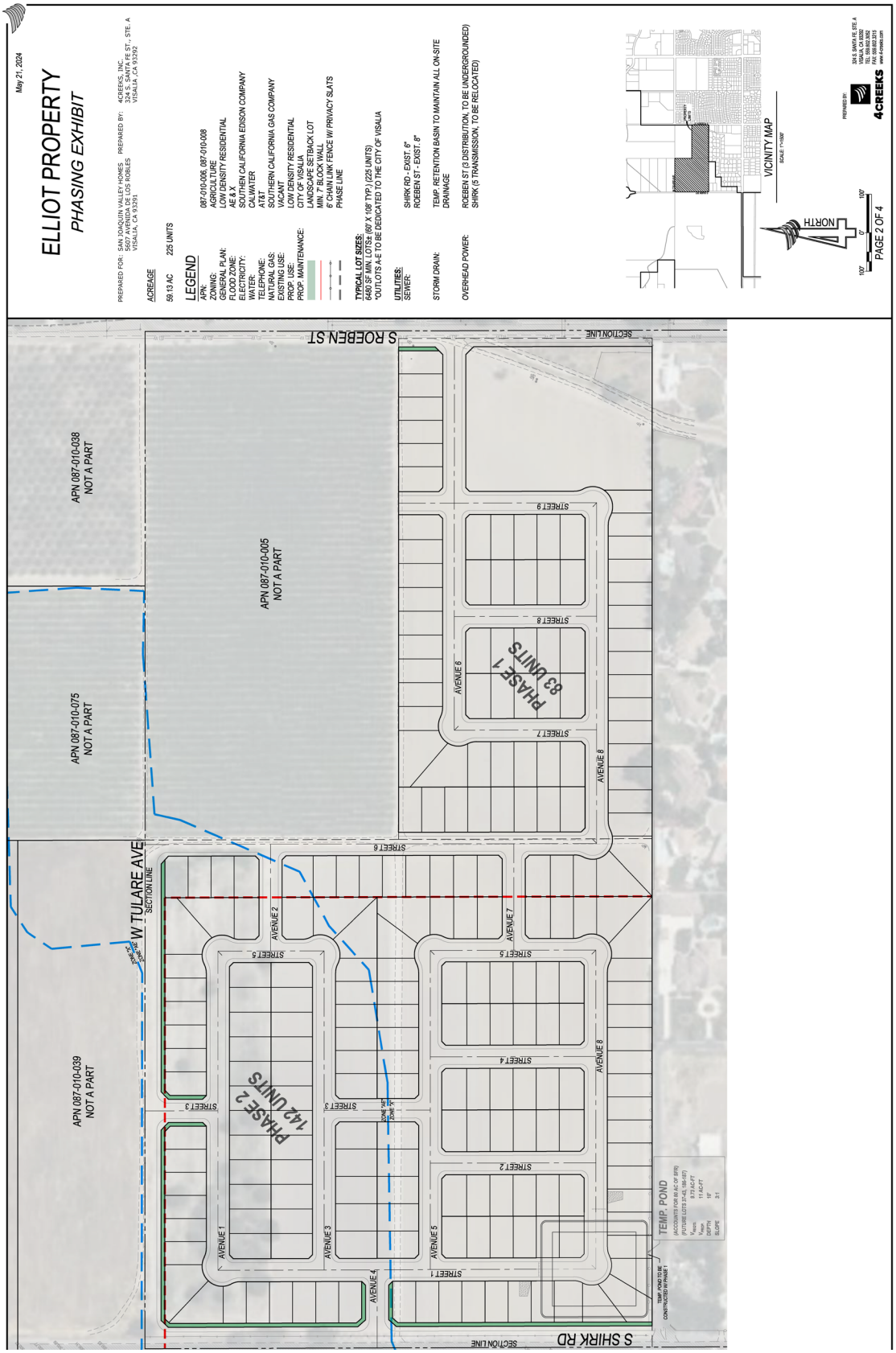


Figure 3-2: Phasing Plan

3.3 EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "no Impact" answers that are adequately supported by the information sources a lead agency cites, in the parentheses following each question. A "No Impact" answer is adequately supported if the reference information sources show that the impact simply does not apply to projects like the one involved (e.g., the Project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the Project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-Site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR if required.

4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c) (3)(D). In this case, a brief discussion should identify the following.

    - Earlier Analysis Used. Identify and state where they are available for review.
    - Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    - Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated." Describe and mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

3.4 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Greenhouse Gas Emissions	☐ Public Services
☐ Agriculture and Forest Resources	☐ Hazards & Hazardous Materials	☐ Recreation
☐ Air Quality	☑ Hydrology and Water Quality	☐ Transportation
☑ Biological Resources	☐ Land Use and Planning	☑ Tribal
☑ Cultural Resources	☐ Mineral Resources	☐ Utilities and Service System
☐ Energy	☐ Noise	☐ Wildfire
☑ Geology and soils	☐ Population	☑ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency) Where potential impacts are anticipated to be significant, mitigation measures will be required, so that impacts may be avoided or reduced to insignificant levels.

On the basis of this initial evaluation:

☐ I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION WILL BE PREPARED.

☑ I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. A Negative Declaration is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed Project could have a significant effect on the environment because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is requested.



6/27/2024

SIGNATURE DATE

Brandon Smith City of Visalia

PRINTED NAME AGENCY

3.5 ENVIRONMENTAL ANALYSIS

The following section provides an evaluation of the impact categories and questions contained in the checklist and identify mitigation measures, if applicable.

I. AESTHETICS

Except as provided in Public Resource Code Section 21099, would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☑	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within state scenic highway?	☐	☐	☑	☐
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the Site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☑
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☑	☐

Environmental Setting

Scenic Resources

Scenic resources include landscapes and features that are visually or aesthetically pleasing. They contribute positively to a distinct community or region. These resources produce a visual benefit to communities. The City of Visalia has a visual character of a mix of rural and built environments. Visalia is surrounded by natural open space agricultural land, characterized by uses such as grazing, open space, and cultivated agriculture. Downtown Visalia is the physical, cultural, and economic center, with historical homes surrounding the downtown. St. John's River flows along the North side of Visalia's city limits, along with smaller creeks and ditches throughout the city. Valley Oak trees, both individually and in groves, also provide an important scenic feature and link to the natural setting of the San Joaquin Valley. The goal of Visalia's

General Plan regarding visual resources is to preserve and re-establish the city's natural waterway system and Valley Oak tree groves with parks, conservation areas, and trailways.

Scenic Vistas

The Visalia General Plan identifies the Sierra Nevada mountains to the east and agricultural lands surrounding the city as scenic vistas surrounding Visalia.

Existing Visual Character

The following photos demonstrate the aesthetic character of the Project area. As shown, the proposed Project Site area is in a relatively flat area characterized by agricultural uses.



Photo 1: Eastern-facing view of the central-western portion of subject Site parcel 087-010-008 (central-western portion of the subject site).



Photo 2: Western-facing view of the northeastern portion of subject Site parcel 087-010-008 (northeastern portion of the subject site).



Photo 3: View of the irrigation canal (Persian Ditch) located in a presumed easement in the southeastern portion of the subject site.



Photo 4: Southern-facing view of the former residential area located adjacent to South Roeben Street in the southeastern portion of the subject site.

Regulatory Setting

Scenic Roadways

The California Scenic Highway Program was established in 1963 by the State Legislature to protect and enhance the natural beauty of California highways and adjacent corridors through conservation strategies. The State Scenic Highway System includes a list of highways that have either been officially designated or are eligible for designation. State laws affiliated with governing the scenic highway program can be found in Sections 260-263 in The Street and Highways Code.

State Scenic Highways

According to the California Department of Transportation mapping of State Scenic Highways, the City of Visalia does not have officially designated State Scenic Highways, however, the City has one eligible State Scenic Highway, a 44-mile stretch of State Route 198 from State Route 99 to Sequoia National Park. This is designated as a scenic corridor in the City's General Plan This portion of the highway is approximately 0.5 miles north from the proposed Site.

City of Visalia General Plan

The 2030 General Plan includes the policies related to aesthetic resources that correlate to the proposed project:

- *LU-P-28*: Continue to use natural and man-made edges, such as major roadways and

waterways within the City's Urban Area Boundary, as urban development limit and growth phasing lines.

- *LU-P-34*: Work with Tulare County to prevent urban development of agricultural land outside of the current growth boundaries and to promote the of use agricultural preserves, where they will promote orderly development.
- *LU-P-42*: Develop scenic corridor and gateway guidelines that will maintain the agricultural character of Visalia at its urban fringe.
- *LU-P-72*: Ensure that noise, traffic, and other potential conflicts that may arise in a mix of commercial and residential uses are mitigated through good Site planning, building design, and/or appropriate operational measures.
- *OSC-P-13*: In new neighborhoods that include waterways, improvement of the waterway corridor, including preservation and/or enhancement of natural features and development of a continuous waterway trail on at least one side, shall be required.
- *OSC-P-17*: Require that new development along waterways maintain a visual orientation and active interface with waterways. Develop design guidelines to be used for review and approval of subdivision and development proposals to illustrate how this can be accomplished for different land uses in various geographic settings.
- *OSC-P-34*: Enhance views and public access to Planning Area waterways and other significant features such as Valley Oak groves consistent with flood protection, irrigation water conveyance, habitat preservation and recreation planning policies.

Tulare County General Plan

The 2030 Tulare County General Plan contains the following goals and policies related to aesthetic resources that correlate to the proposed project:

- *SL-1.1 Natural Landscapes:* During review of discretionary approvals, including parcel and subdivision maps, the County shall as appropriate, require new development to not significantly impact or block views of Tulare County's natural landscapes.
    - Be sited to minimize obstruction of views from public lands and rights-of-ways,
    - Screen parking areas from view,
    - Include landscaping that screens the development,
    - Limit the impact of new roadways and grading on natural settings, and
    - Include signage that is compatible and in character with the location and building design
- *SL-1.2 Working Landscapes*: The County shall require that new non-agricultural structures and infrastructure located in or adjacent to croplands, orchards, vineyards, and open rangelands be sited so as to not obstruct important viewsheds and to be designed to reflect unique relationships with the landscape.
    - Referencing traditional agricultural building forms and materials,
    - Screening and breaking up parking and paving with landscaping, and
    - Minimizing light pollution and bright signage.
- *SL-1.3 Watercourses*: The County shall protect visual access to, and the character of, Tulare County's scenic rivers, lakes, and irrigation canals.
- *SL-3.2 Urban Expansion–Edges*: The County shall design and plan the edges and interface of communities with working and natural landscapes to protect their scenic qualities by:
    - Maintaining urban separators between cities and communities,
    - Encouraging cities to master plan mixed-density neighborhoods at their edges, locating compatible lower density uses adjacent to working and natural landscapes, and
    - Protecting important natural, cultural, and scenic resources located within areas that may be urbanized in the future.

City of Visalia Zoning Ordinance

The Visalia Zoning Ordinance governs the distribution and intensity of land uses, sets the principles for evaluating development, and guides the development and growth of the City. The Zoning Ordinance establishes specific development criteria for each zoning district (i.e., parking requirements, walls, fencing, setbacks, building height, etc.).

City of Visalia Valley Oak Ordinance

The City's Valley Oak Ordinance provides basic standards, measures, and compliance requirements for the preservation and protection of native Valley oak trees and landmark trees. The Ordinance prohibits the destruction of oak trees except with an oak tree removal permit. A permit may be granted only if it is found that the oak tree is in danger of falling on a structure or is a host for a plant, pest, or disease endangering other species; if removal is necessary to allow the reasonable enjoyment of private property; or if urban forestry or land management practices warrant removal. If a tree removal permit is granted, the tree must either be replaced by new oak trees on the same property, or by paying mitigation fees to be used for the establishment of new oak trees on other property.

Discussion

a) Would the Project have a substantial adverse effect on a scenic vista?

Less than Significant Impact: A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. The Sierra Nevada mountains to the east and agricultural lands surrounding the city are the primary scenic vista within this region. The Site is surrounded by agricultural uses and single-family homes, while the Sierra Nevada foothills are approximately 20 miles east of the Project Site. The Project would obstruct some views of agricultural uses. However, the Project would not significantly alter views overall from the surrounding community. There is *a less than significant impact.*

b) Would the Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within state scenic highway?

No Impact: There are no officially designated State Scenic Highways located in the City of Visalia or nearby the site. Highway 198, 0.5 miles north of the Site, is eligible to become a State Scenic Highway. The Site is not visible from Highway 198 and will not impact any views. The proposed Project would not damage any scenic resources within a state scenic highway and there is *no impact.*

c) In non-urbanized areas, would the Project substantially degrade the existing visual character or quality of the Site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?

Less than Significant Impact: The Project Site contains an Oak Grove in the northern portion. Following the Valley Oak Ordinance, any trees that must be removed will be inspected and will be replaced. The materials, signage, fencing, landscaping, and building materials used in the construction of the Project will be selected based on their

ability to improve the overall visual character of the area. The proposed Project will comply with the Valley Oak Ordinance (Visalia Municipal Code Chapter 12.24) as well as all applicable zoning and other regulations governing scenic quality. There is *a less than significant impact.*

d) Would the Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less than Significant Impact: The proposed Project would result in new lighting sources on the Project Site consistent with adjacent residential development. New lighting sources would include interior lighting from residences, street lighting, and security lighting. All street and landscape lighting will be consistent with the City's lighting standards, which are developed to minimize impacts related to excessive light and glare. Although the Project will introduce new light sources to the area, all lighting will be consistent with adjacent residential land uses and the City's lighting standards. The impacts are *less than significant.*

II. AGRICULTURE AND FOREST RESOURCES:

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in the Forest Protocols adopted by the California Air Resources Board. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☑	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?	☐	☐	☑	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned timberland Production (as defined by Government Code section 51104(g)?	☐	☐	☐	☑

d) Result in the loss of forestland or conversion of forest land to non-forest use?	☐	☐	☐	☑
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forestland to non-forest use?	☐	☐	☑	☐

Environmental Setting

Central California is one of the world's premier growing regions. Agriculture is an important economic resource for Visalia and the surrounding areas. 39,518 acres, or 65 percent, of the Visalia Planning Area is farmland producing fruit and nut crops, vegetables, nursery products (trees), apiary products (honey), seed crops (cotton), industrial crops (timber), field crops (alfalfa, barley, corn), and livestock.

The proposed Project Site is located within the Visalia Planning Area. The proposed Project Site is not under a Williamson Act Contract or a Farmland Security Zone contract. The proposed Site is designated as with two land use designations, *Prime Farmland* and *Urban and Built-Up Land*, under the Important Farmland Mapping and Monitoring Program (FMMP). The Site is within the Tier 2 Development Boundary and is designated for Low-Density Housing. To the north and west is additional Prime Farmland. To the south and east are Urban and Built-up land.

Regulatory Setting

California Land Conservation Act of 1965

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, allows local governments to enter into contracts with private landowners to restrict the activities on specific parcels of land to agricultural or open space uses. The landowners benefit from the contract by receiving greatly reduced property tax assessments. The California Land Conservation Act is overseen by the California Department of Conservation; however local governments are responsible for determining specific allowed uses and enforcing the contract.

Right to Farm Ordinance

Tulare County adopted a "Right to Farm Ordinance," to protect the rights of commercial farming operations while promoting a "good neighbor policy" between these uses. Under this ordinance, property owners and residents are made aware that they may experience inconveniences due to commercial agricultural operations.

Visalia Municipal Code Chapter 18.04: Agricultural Land Preservation Program

Chapter 18.04 of the Visalia Municipal Code details the Agricultural Land Preservation Program (Program) in Visalia. The Program intends to establish a process for the required preservation of agricultural land through the acquisition of agricultural conservation easements or the payment of an in-lieu fee for projects.

California Farmland Mapping and Monitoring Program (FMMP)

The FMMP is implemented by the California Department of Conservation (DOC) to conserve and protect agricultural lands within the State. Land is included in this program based on soil type, annual crop yields, and other factors that influence the quality of farmland. The FMMP mapping categories for the most important statewide farmland are as follows:

- ***Prime Farmland*** has the ideal physical and chemical composition for crop production. It has been used for irrigated production in the four years prior to classification and can produce sustained yields. 51% of the Visalia Planning Area is classified as Prime Farmland.
- ***Farmland of Statewide Importance*** has also been used for irrigated production in the four years prior to classification and is only slightly poorer quality than Prime Farmland. 11% of the Visalia Planning Area is classified as Farmland of Statewide Importance.
- ***Unique Farmland*** has been cropped in the four years prior to classification and does not meet the criteria for Prime Farmland or Farmland of Statewide Importance but has produced specific crops with high economic value. Less than 1% of the Visalia Planning Area is classified as Unique Farmland.
- ***Farmland of Local Importance*** encompasses farmland that does not meet the criteria for the previous three categories. These may lack irrigation, produce major crops, be zoned as agricultural, and/or support dairy. 2% of the Visalia Planning Area is classified as Farmland of Local Importance.

City of Visalia General Plan

The 2030 General Plan includes the policies related to agricultural resources that correlate to the proposed project:

- *LU-P-14*: Recognize the importance of agriculture-related business to the City and region, and support the continuation and development of agriculture and agriculture related enterprises in and around Visalia by:
  - Implementing growth boundaries and cooperating with the County on agricultural preservation efforts;
  - Accommodating agriculture-related industries in industrial districts;
  - Facilitating successful farmers' markets;
  - Helping to promote locally grown and produced agricultural goods, and the image of Visalia and Tulare County as an agricultural region.
- *LU-P-19*: Ensure that growth occurs in a compact and concentric fashion by implementing the General Plan's phased growth strategy.

- *LU-P-21*: Allow annexation and development of residential, commercial, and industrial land to occur within the Tier II UDB and the Tier III Urban Growth Boundary consistent with the City's Land Use Diagram, according to the stated phasing thresholds.
- *LU-P-30*: Maintain greenbelts, or agricultural/open space buffer areas, between Visalia and other communities by implementing growth boundaries and working with Tulare County and land developers to prevent premature urban growth north of the St. Johns River and in other sensitive locations within the timeframe of this General Plan.
- *LU-P-31*: Promote the preservation of permanent agricultural open space around the City by protecting viable agricultural operations and land within the City limits in the airport and wastewater treatment plant environs.
- *LU-P-32*: Continue to maintain a 20-acre minimum for parcel map proposals in areas designated for Agriculture to encourage viable agricultural operations in the Planning Area.
- *OSC-P-27*: To allow efficient cultivation, pest control and harvesting methods; require buffer and transition areas between urban development and adjoining or nearby agricultural land.
- *OSC-P-28*: Require new development to implement measures, as appropriate, to minimize soil erosion related to grading, site preparation, landscaping, and construction.

Tulare County General Plan

The 2030 Tulare County General Plan contains following goals related to agricultural resources that correlate to the proposed project:

- *AG-1.1*: The County shall maintain agriculture as the primary land use in the valley region of the County, not only in recognition of the economic importance of agriculture, but also in terms of agriculture's real contribution to the conservation of open space and natural resources.
- *AG-1.6*: The County shall consider developing an Agricultural Conservation Easement Program (ACEP) to help protect and preserve agricultural lands (including "Important Farmlands"), as defined in this Element. This program may require payment of an in-lieu fee sufficient to purchase a farmland conservation easement, farmland deed restriction, or other farmland conservation mechanism as a condition of approval for conservation of important agricultural land to non-agricultural use. If available, the ACEP shall be used for replacement lands determined to be of statewide significance (Prime or other Important Farmlands), or sensitive and necessary for the preservation of agricultural land, including land that may be a part of a community separator as part of a comprehensive program to establish community separators. The in-lieu fee or other conservation mechanism shall recognize the importance of land value and shall require equivalent mitigation.

- *AG*-1.7: The County shall promote the preservation of its agricultural economic base and open space resources through the implementation of resource management programs such as the Williamson Act, Rural Valley Lands Plan, Foothill Growth Management Plan or similar types of strategies and the identification of growth boundaries for all urban areas located in the County.
- *AG-1.8*: The County shall not approve applications for preserves or regular Williamson Act contracts on lands located within a UDB and/or HDB unless it is demonstrated that the restriction of such land will not detrimentally affect the growth of the community involved for the succeeding 10 years, that the property in question has special public values for open space, conservation, other comparable uses, or that the contract is consistent with the publicly desirable future use and control of the land in question. If proposed within a UDB of an incorporated city, the County shall give written notice to the affected city pursuant to Government Code §51233.
- *AG-1.10*: The County shall oppose extension of urban services, such as sewer lines, water lines, or other urban infrastructure, into areas designated for agriculture use unless necessary to resolve a public health situation. Where necessary to address a public health issue, services should be located in public rights-of-way in order to prevent interference with agricultural operations and to provide ease of access for operation and maintenance. Service capacity and length of lines should be designed to prevent the conversion of agricultural lands into urban/suburban uses.
- *AG-1.11*: The County shall examine the feasibility of employing agricultural buffers between agricultural and non-agricultural uses, and along the edges of UDBs and HDBs. Considering factors include the type of operation and chemicals used for spraying, building orientation, planting of trees for screening, location of existing and future rights-of-way (roads, railroads, canals, power lines, etc.), and unique site conditions.
- *LU-1.8*: The County shall encourage and provide incentives for infill development to occur in communities and hamlets within or adjacent to existing development in order to maximize the use of land within existing urban areas, minimize the conversion of existing agricultural land, and minimize environmental concerns associated with new development.
- *LU-2.1*: The County shall maintain agriculturally-designated areas for agriculture use by directing urban development away from valuable agricultural lands to cities, unincorporated communities, hamlets, and planned community areas where public facilities and infrastructure are available.
- *PF-1.2*: The County shall ensure that urban development only takes place in the following areas:
    - Within incorporated cities and CACUDBs
    - Within the UDBs of adjacent cities in other counties, unincorporated communities, planned community areas, and HDBs of hamlets

  - Within foothill development corridors as determined by procedures set forth in Foothill Growth Management Plan
  - Within areas set aside for urban use in the Mountain Framework Plan and the mountain sub-area plans; and
  - Within other areas suited for non-agricultural development, as determined by the procedures set forth in the Rural Valley Lands Plan.
- *PF-1.3*: The County shall encourage those types of urban land uses that benefit from urban services to develop within UDBs and HDBs. Permanent uses which do not benefit from urban services shall be discouraged within these areas. This shall not apply to agricultural or agricultural support uses, including the cultivation of land or other uses accessory to the cultivation of land provided that such accessory uses are time-limited through Special Use Permit procedures.
- *PF-1.4*: The County shall encourage urban development to locate in existing UDBs and HDBs where infrastructure is available or may be established in conjunction with development. The County shall ensure that development does not occur unless adequate infrastructure is available, that sufficient water supplies are available or can be made available, and that there are adequate provisions for long term management and maintenance of infrastructure and identified water supplies.

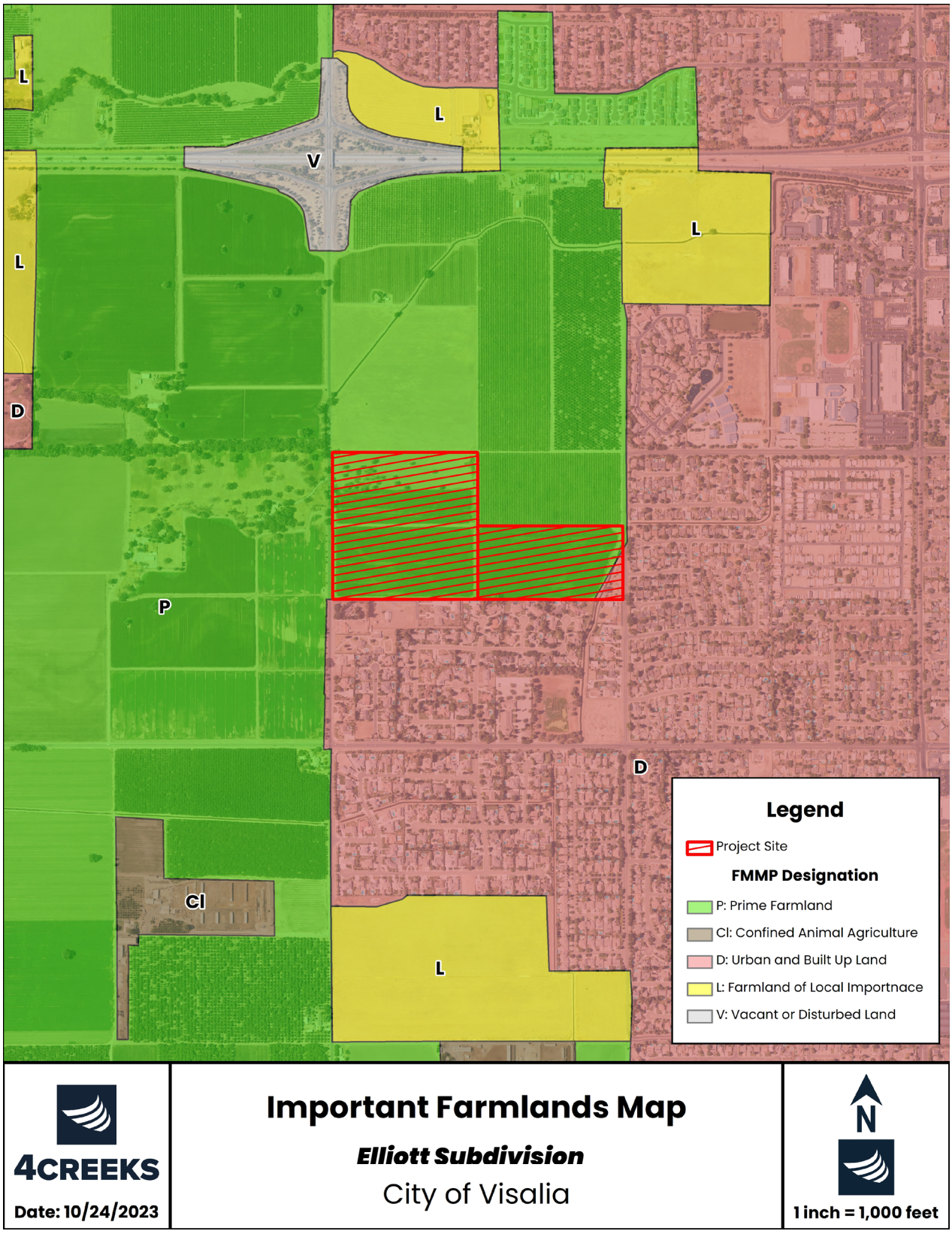


Figure 3-3: Important Farmlands Map

Discussion

a) Would the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Less Than Significant Impact: The Project Site is currently occupied by agricultural land with field crops. Implementation of the proposed Project would result in the permanent conversion of approximately 57.82 acres of Prime Farmland to non-agricultural uses.

The loss of Prime Farmland on the Project Site would result in the decrease of Important Farmland inventory in Visalia Planning Area. Visalia Planning Area currently has an Important Farmland inventory of 43,155 acres, 33,991 acres of which were categorized as Prime Farmland. Implementation of the Project would convert 57.82 acres of Prime Farmland, which would result in a 0.13 percent decrease in the total Important Farmland inventory of Visalia Planning Area and a 0.17 percent decrease in the Prime Farmland inventory.

As shown in Table 3-1, the Visalia 2030 General Plan (at full buildout) plans to develop 14,265 total acres of Important Farmland, of which 12,490 acres are Prime Farmland. Most of the growth is planned to be adjacent to urbanized areas, which is much less disruptive to other agricultural uses countywide because it discourages the development of new rural neighborhoods or communities that would require the extension of infrastructure that would create growth-inducing impacts and potentially greater impacts to agricultural resources.

FMMP Designation	Existing Planning Area Total (Acres)	Planning Area Total at General Plan Buildout (Acres)	Change
Prime Farmland	33,991	21,501	-12,490 (-37%)
Farmland of Statewide Importance	7,353	6,954	-399 (-5%)
Unique Farmland	181	137	-44 (-24%)
Farmland of Local Importance	1,630	298	-1,333 (-82%)
Important Farmland Total	**43,155**	**28,890**	**-14,265 (-33%)**

Table 3-1: Important Farmland Developed Under 2030 General Plan. Source: Visalia Planning Area General Plan EIR

Although the proposed Site is located on Prime Farmland, the development is in accordance with the 2030 General Plan. The Site is within the Tier 2 Development Boundary and is designated as Low Density Residential by the General Plan. The Project will follow all existing and proposed 2030 General Plan policies to reduce potential impacts.

However, following *Visalia Municipal Code Chapter 18.04*: *Agricultural Land Preservation Program,* the Project will be required to preserve 43.11 acres of Prime Farmland or Farmland of Statewide Importance. This is detailed in the Agricultural Mitigation Memo (Appendix E). The developer will acquire a minimum of 47.35 acres of Prime Farmland or Farmland of Statewide Importance. This land will be located in the southern San Joaquin Valley, but outside of Visalia's Sphere of Influence. This farmland will be preserved for long-term agricultural uses. There is a *less than significant impact.*

b) Would the Project conflict with existing zoning for agricultural use, or a Williamson Act Contract?

Less Than Significant Impact: The Site is currently zoned for agriculture by Tulare County. However, it is within the Visalia Planning Area, Tier 2 Development Boundary and will be annexed by the City. It currently has a General Plan designation of Low Density Residential that would suit the proposed Project. The Project Site is not under a Williamson Act Contract. There is *a less than significant impact.*

c) Would the Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned timberland Production (as defined by Government Code section 51104(g)?

No Impact: The Project Site is not zoned for forest or timberland production. Therefore, *no impacts* would occur.

d) Would the Project result in the loss of forestland or conversion of forest land to non-forest use?

No Impact: No conversion of forestland, as defined under Public Resource Code or General Code, will occur as a result of the Project and there would be *no impacts*.

e) Would the Project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forestland to non-forest use?

Less Than Significant Impact: As discussed above, new development including the Project Site would be focused in and around existing communities. This would prevent new infrastructure from interfering with surrounding farmland. The Project does not include any features which could result in the conversion of forestland to non-forest use. There is a *less than significant impact.*

III. AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☑	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☑	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☑	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☑	☐

Environmental Setting

Air pollution is directly related to regional topography. Topographic features can either stimulate the movement of air or restrict air movement. California is divided into regional air basins based on topographic air drainage features. The proposed Project Site is within the San Joaquin Valley Air Basin, which is bordered by the Sierra Nevada Mountains to the East, Coastal Ranges to the West, and the Tehachapi Mountains to the South.

The mountain ranges surrounding the San Joaquin Valley Air Basin (SJVAB) serve to restrict air movement and prevent the dispersal of pollution. As a result, the SJVAB is highly susceptible to pollution accumulation over time. As shown in Table 3-2, the SJVAB is in nonattainment for several pollutant standards. The primary pollutants of concern in the San Joaquin Valley are ozone (O3) and PM10. Table 3-3 displays Ambient Air Quality Standards for California and Nationally.

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone – One hour	No Federal Standard[f]	Nonattainment/Severe
Ozone – Eight hour	Nonattainment/Extreme[e]	Nonattainment
PM 10	Attainment[c]	Nonattainment
PM 2.5	Nonattainment[d]	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead (Particulate)	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

[a] See 40 CFR Part 81

[b] See CCR Title 17 Sections 60200-60210

[c] On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM10 National Ambient Air Quality Standard (NAAQS) and approved the PM10 Maintenance Plan.

[d] The Valley is designated nonattainment for the 1997 PM2.5 NAAQS. EPA designated the Valley as nonattainment for the 2006 PM2.5 NAAQS on November 13, 2009 (effective December 14, 2009).

[e] Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).

[f] Effective June 15, 2005, the U.S. Environmental Protection Agency (EPA) revoked the federal 1-hour ozone standard, including associated designations and classifications. EPA had previously classified the SJVAB as extreme nonattainment for this standard. EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan on March 8, 2010 (effective April 7, 2010). Many applicable requirements for extreme 1-hour ozone nonattainment areas continue to apply to the SJVAB.

Table 3-2. San Joaquin Valley Attainment Status; Source: SJVAPCD

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (03)	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	--	Same as Primary Standard	Ultraviolet 8 Hour Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.075 ppm (147 µg/m³)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Annual Analysis
	Annual Arithmetic Mean	20 µg/m3		--		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour		Gravimetric or Beta Attenuation	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Annual Analysis
	Annual Arithmetic Mean	12 µg/m³		15 µg/m³		
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m³)	--	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m³)		9 ppm (10 mg/m³)	--	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		--	--	
Nitrogen Dioxide (NO_2) [8]	1 Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m³)	--	Gas Phase Annual Chemiluminescence
	Arithmetic Mean	0.030 ppm (57 µg/m³)		53 ppb (100 µg/m³)	Same as Primary Standard	
Sulfur Dioxide	1 Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	--	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	--		--	0.5 ppm (1300 µg/m³)	
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (for certain areas)9	--	
	Annual Arithmetic Mean	--		0.030 ppm (for certain areas)9	--	
Lead[10,11]	30 Day Average	1.5 µg/m³	Atomic Absorption	--	--	High Volume Sampler and Atomic Absorption
	Calendar Quarter	--		1.5 µg/m3 (for certain areas)11	Same as Primary Standard	
	Rolling 3-Month Average	--		0.15 µg/m³		
Visibility Reducing Particles[12]	8 Hour	See footnote 12	Beta Attenuation and Transmittance through Filter Tape	No National Standard		
Sulfates	24 Hour	25 µg/m³	Ion Chromatography			

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[10]	24 Hour	0.01 ppm (26 μg/m³)	Gas Chromatography			

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each Site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 μg/m3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.
8. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each Site must not exceed 100 ppb. Note that the national standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.
9. On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each Site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
10. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
11. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 μg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
12. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Table 3-3. Ambient Air Quality Standards; Source: SJVAPCD, San Joaquin Valley Attainment Status

Valley Fever

Valley Fever is an illness caused by a fungus (*Coccidioides immitis* and *C. posadasii*) that grows in soils under certain conditions. Favorable conditions for the Valley Fever fungus include

low rainfall, high summer temperatures, and moderate winter temperatures. In California, the counties with the highest incident of Valley Fever are Fresno, Kern, and Kings counties. When soils are disturbed by wind or activities like construction and farming, Valley Fever fungal spores can become airborne. The spores present a potential health hazard when inhaled. Individuals in occupations such as construction, agriculture, and archaeology have a higher risk of exposure due to working in areas of disturbed soils which may have the Valley Fever fungus.

Regulatory Setting

Federal Clean Air Act

The 1977 Federal Clean Air Act (CAA) authorized the establishment of the National Ambient Air Quality Standards (NAAQS) and set deadlines for their attainment. The Clean Air Act identifies specific emission reduction goals, requires both a demonstration of reasonable further progress and an attainment demonstration, and incorporates more stringent sanctions for failure to meet interim milestones. The U.S. EPA is the federal agency charged with administering the Act and other air quality-related legislation. EPA's principal functions include setting NAAQS; establishing minimum national emission limits for major sources of pollution; and promulgating regulations. Under CAA, the NCCAB is identified as an attainment area for all pollutants.

Nonroad Diesel Rule

The EPA established a series of increasingly strict emission standards for new offroad diesel equipment, onroad diesel trucks, and harbor craft. New construction equipment used for the project, including heavy duty trucks, off-road construction equipment, and tugboats will be required to comply with the emission standards.

California Clean Air Act

California Air Resources Board coordinates and oversees both state and federal air pollution control programs in California. As part of this responsibility, California Air Resources Board monitors existing air quality, establishes California Ambient Air Quality Standards, and limits allowable emissions from vehicular sources. Regulatory authority within established air basins is provided by air pollution control and management districts, which control stationary-source and most categories of area-source emissions and develop regional air quality plans. The Project is located within the jurisdiction of the San Joaquin Valley Air Pollution Control District.

The state and federal standards for the criteria pollutants are presented in Section 8.4 of The San Joaquin Valley Unified Air Pollution Control District's 2015 "Guidance for Assessing and Mitigating Air Quality Impacts". These standards are designed to protect public health and welfare. The "primary" standards have been established to protect the public health. The "secondary" standards are intended to protect the nation's welfare and account for air pollutant effects on soils, water, visibility, materials, vegetation, and other aspects of general

welfare. The U.S. EPA revoked the national 1-hour ozone standard on June 15, 2005, and the annual PM_{10} standard on September 21, 2006, when a new $PM_{2.5}$ 24-hour standard was established.

State Tailpipe Emission Standards

To reduce emissions from off-road diesel equipment, onroad diesel trucks, and harbor craft, ARB established a series of increasingly strict emission standards for new engines. New construction equipment used for the project, including heavy duty trucks, off-road construction equipment, tugboats, and barges, will be required to comply with the standards

San Joaquin Valley Air Pollution Control District (SJVAPCD)

The SJVAPCD is responsible for enforcing air quality standards in the Project area. To meet state and federal air quality objectives, the SJVAPCD adopted the following thresholds of significance for projects, as shown in Table 3-4.

Pollutant/Precursor	Construction Emissions	Operational Emissions	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
	Emissions (tpy)	Emissions (tpy)	Emissions (tpy)
CO	100	100	100
Nox	10	10	10
ROG	10	10	10
SOx	27	27	27
PM10	15	15	15
PM2.5	15	15	15

Table 3-4. SJVAPCD Thresholds of Significance for Criteria Pollutants; Source: SJVAPCD, Recommended Thresholds of Significant Impact

The following SJVAPCD rules and regulations may apply to the proposed project:

- **Rule 3135:** Dust Control Plan Fee. All projects which include construction, demolition, excavation, extraction, and/or other earth-moving activities as defined by Regulation VIII (Described below) are required to submit a Dust Control Plan and required fees to mitigate impacts related to dust.
- **Rule 4101:** Visible Emissions. District Rule 4101 prohibits visible emissions of air contaminants that are dark in color and/or have the potential to obstruct visibility.
- **Rule 9510:** Indirect Source Review (ISR). This rule reduces the impact of PM10 and NOX emissions from growth on the SJVB. This rule places application and emission reduction requirements on applicable development projects to reduce emissions through on-site mitigation, off-site SJVAPCD-administered projects, or a combination of the two. This Project will submit an Air Impact Assessment (AIA) application following Rule 9510's requirements.
- **Regulation VIII:** Fugitive PM10 Prohibitions. Regulation VIII is composed of eight rules which together aim to limit PM10 emissions by reducing fugitive dust. These rules contain required management practices to limit PM10 emissions during construction, demolition, excavation, extraction, and/or other earth-moving activities.

City of Visalia General Plan

The 2030 General Plan includes the policies related to air quality that correlate to the proposed project:

- *AQ-P-2*: Require use of Best Management Practices (BMPs) to reduce particulate emission as a condition of approval for all subdivisions, development plans, and grading permits, in conformance with the San Joaquin Valley Air Pollution Control District Fugitive Dust Rule.
- *AQ-P-3*: Support implementation of the San Joaquin Valley Air Pollution Control District's regulations on the use of wood-burning fireplaces, as well as their regulations for the installation of EPA-certified wood heaters or approved woodburning appliances in new residential development and a "No Burn" policy on days when the air quality is poor.
- *AQ-P-9*: Continue to mitigate short-term construction impacts and long-term stationary source impacts on air quality on a case-by-case basis and continue to assess air quality impacts through environmental review. Require developers to implement Best Management Practices (BMPs) to reduce air pollutant emissions associated with the construction and operation of development projects.

Discussion

a) Would the Project conflict with or obstruct implementation of the applicable air quality plan?

No Impact: The proposed Project is located within the boundaries of the San Joaquin Valley Air Pollution Control District (SJVAPCD) and would result in air pollutant emissions that are regulated by the air district during both its construction and operational phases. The SJVAPCD is responsible for bringing air quality in the Visalia Planning Area into compliance with federal and state air quality standards. The Air District has Particulate Matter (PM) plans, Ozone Plans, and Carbon Monoxide Plans that serve as the clean air plan for the basin.

Together, these plans quantify the required emission reductions to meet federal and state air quality standards and provide strategies to meet these standards. The SJVAPCD adopted the Indirect Source Review (ISR) Rule to fulfill the District's emission reduction commitments in its PM10 and Ozone (NOx) attainment plans and has since determined that implementation and compliance with ISR would reduce the cumulative PM10 and NOx impacts anticipated in the air quality plans to a less than significant level.

Construction Phase: Project construction would generate pollutant emissions from the following construction activities: site preparation, grading, building construction, application of architectural coatings, and paving. The construction-related emissions from these activities were calculated using CalEEMod. The full CalEEMod report can be

found in Appendix A. As shown in Table 3-5 below, Project construction-related emissions do not exceed the thresholds established by the SJVAPCD.

	CO (tpy)	ROG (tpy)	SOx (tpy)*	Nox (tpy)	PM10 (tpy)	PM2.5 (tpy)
Emissions Generated from Project Construction	**2.85**	**3.80**	**.0063**	**2.71**	**0.92**	**0.44**
SJVAPCD Air Quality Thresholds of Significance	**100**	**10**	**27**	**10**	**15**	**15**
*Threshold established by SJVAPCD for SOx, however emissions are reported as SO2 by CalEEMod.						

Table 3-5. Projected Project Emissions Compared to SJVAPCD Thresholds of Significance for Criteria Pollutants related to Construction; Source: SJVAPCD, CalEEMod (v. 2020.4.0) Analysis (Appendix A)

Operational Phase: Implementation of the proposed Project would result in long-term emissions associated with area sources, such as natural gas consumption, landscaping, applications of architectural coatings, and consumer products, as well as mobile vehicle emissions. Operational emissions from these factors were calculated using CalEEMod. The full CalEEMod report can be found in Appendix A. As shown in Table 3-6 below, the project's operational emissions do not exceed the thresholds established by the SJVAPCD.

	CO (tpy)	ROG (tpy)	SOx (tpy)*	Nox (tpy)	PM10 (tpy)	PM2.5 (tpy)
Operational Emissions (Dry Years)	**9.30**	**2.83**	**0.021**	**1.57**	**2.25**	**0.64**
SJVAPCD Air Quality Thresholds of Significance	**100**	**10**	**27**	**10**	**15**	**15**
*Threshold established by SJVAPCD for SOx, however, emissions are reported as SO2 by CalEEMod.						

Table 3-6. Projected Project Emissions Compared to SJVAPCD Thresholds of Significance for Criteria Pollutants related to Operations; Source: SJVAPCD, CalEEMod (v. 2020.4.0) Analysis (Appendix A)

Because the emissions from both the construction and operation of the proposed Project would be below the thresholds of significance established by the SJVAPCD, the

Project would not conflict with or obstruct the implementation of an applicable air quality plan and there is a *less than significant impact.*

b) Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact: The SJVAPCD is responsible for bringing air quality in the Visalia Planning Area into compliance with federal and state air quality standards. The significance thresholds and rules developed by the SJVAPCD are designed to prevent projects from violating air quality standards or significantly contributing to existing air quality violations. As discussed above, neither construction-related emissions nor operation-related emissions will exceed thresholds established by the SJVAPCD. The Project will comply with all applicable SJVAPCD rules and regulations, which will further reduce the potential for any significant impacts related to air quality as a result of the Project implementation. Because these thresholds and regulations are designed to achieve and/or maintain federal and state air quality standards, and the Project is compliant with these thresholds and regulations, the Project will not violate an air quality standard or significantly contribute to an existing air quality violation. The impact is *less than significant.*

c) Would the Project expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact: The single-family residences located to the south and east are the closest sensitive receptors. The Project does not include any Project components identified by the California Air Resources Board that could potentially impact any sensitive receptors. These include heavily traveled roads, distribution centers, fueling stations, and dry-cleaning operations. The Project would not expose sensitive receptors to substantial pollutant concentrations. The impact would be *less than significant.*

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact: The Project will create temporary localized odors during Project construction. The proposed Project will not introduce conflicting land use (surrounding land includes residential neighborhoods) to the area and will not have any component that would typically emit odors. The Project would not create objectionable odors affecting a substantial number of people. Therefore, impacts would be *less than significant.*

IV. BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish & Game or U.S. fish and Wildlife Service?	☐	☑	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☑	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through director removal, filling, hydrological interruption, or other means?	☐	☐	☐	☑
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☑	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☑	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☑

Discussion for this section originates from the Biological Resource Assessment that was prepared for this project by Soar Environmental Consulting to identify biological resources present or potentially present on the project site and assess the significance of project impacts on such resources per provisions of the California Environmental Quality Act (CEQA), the Federal Clean Water Act (CWA), the state and federal endangered species acts (FESA and CESA respectively), California Fish and Game Code, and California Water Code. The research included the California Natural Diversity Database (CNDDB), the United States Fish and Wildlife

Service (USFWS) Information for Planning and Consultation (IPaC), and the California Native Plant Society (CNPS) Online Rare Plant Inventory. The full document can be found in Appendix B.

Environmental Setting

The Project Site is in the western portion of the Visalia Planning Area within the lower San Joaquin Valley, in the Central Valley of California. The Central Valley is bordered to the east by the Sierra Nevada Mountain Range to the east and the Coast Ranges to the west. Like most of California, Visalia is considered a Mediterranean climate.

Warm, dry summers are followed by cool, moist winters. Summer temperatures often reach above 90 degrees Fahrenheit, and the humidity is relatively low. Winter temperatures are often below 60 degrees Fahrenheit during the day and rarely exceed 70 degrees. On average, Visalia receives approximately 11 inches of precipitation in the form of rainfall yearly, most of which occurs between October and March.

Site Description

The topography of the Project Area is relatively flat with a very gradual west facing slope at approximately 305 feet elevation in the eastern property and 301 feet elevation on the western edge of the property. The entire property had been disced and is composed of approximately 49 acres of active agricultural land, 5 acres of regularly maintained valley oak (Quercus lobata) woodland, and 5 acres of grassland. The proposed Project Site is in an urban and agricultural interface environment just outside the western boundary of the City of Visalia. The proposed Project Site is bounded by agricultural fields to the north and east, with single-family homes to the south. A large open grassland field property borders the northern edge, and a large ranch-style residential property with open valley oak woodland occurs along the western edge.

One small, unvegetated open water canal extends north to south at the southeastern edge of the site. Another open water channel is approximately 40 yards outside the northwest corner, west of Shirk Road and drains westward across the wooded ranch property outside the Project Area. These canals are maintained with no vegetation in the channels. The southern canal that occurs within the Project Area is proposed to be turned into an open space park. The canal near the northwest corner is outside of the Project Area. No potentially jurisdictional waters or wetland features occur within the proposed Project Area. There were no signs of pooling water, vernal pool habitat or seasonal wetlands during the focused field survey. The area is active agricultural land or is actively maintained and disced. There are no structures on the property. While no shrub layer occurs on the property, there is a stand of valley oak woodland in the northwest corner that has approximately 31 valley oak trees and other oak saplings. One of these trees is approximately 30” diameter-at-breast height (dbh), however, most of the valley oak trees are between 12” to 24” dbh, respectively. One other large valley oak tree occurs near

the middle of the Project Area along the southern edge. This oak tree would be considered a heritage valley oak, is greater than 36" dbh, and is a multi-trunked tree. The oak trees provide limited nesting and foraging habitat for birds and wildlife; however, the uncultivated grassland and agricultural land represent potential foraging habitat for terrestrial bird and wildlife species.

Prior to performing the Habitat Assessment, Soar Environmental conducted a records search for threatened or endangered species that could potentially occur in the vicinity of the Project Area. The records search included a review of the California Natural Diversity Database (CNDDB), the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC), and California Native Plant Society (CNPS) Online Rare Plant Inventory. A full list of special-status wildlife and vascular plant species with the potential to occur in the Project Area is included below in Table 3-7.

No special-status plant species and one sensitive wildlife species were observed during the site reconnaissance. Nuttall's woodpecker is a species covered by the Migratory Bird Treaty Act (MBTA) and a CDFW bird species of concern. Several other bird species were observed flying and perched on oak trees in the area including red-tail hawk (Buteo jamaicensis). While no other special status species were observed, the Project Area contains potentially suitable habitat for the following species:

Species Name	Species Observed on Project Site?	Potential for Occurrence on Project Site
Amphibians		
Western spadefoot toad (*Spea hammondii*)	No	**Low:** Species is known to occur within 2 miles of the Project Area and there is no breeding habitat and limited upland dispersal habitat for the species in the Project Area.
California tiger salamander (*Ambystoma californiense*)	No	**Low:** Species is not known to occur in the vicinity of the site and there is limited potential estivating habitat for the species in the oak woodland and grassland on the site.
Birds		
Oak titmouse (*Baeolophus inornatus*)	No	**Low.** Limited potential nesting and foraging habitat in the Project Area.
Nuttall's woodpecker (*Dryobates nuttallii*)	Yes	**Present.** Species observed foraging in Project Area during survey. Limited potential nesting and abundant foraging habitat in the Project Area.

Swainson's hawk (*Buteo swainsoni*)	No	**High:** Species known to occur from nine CNDDB records within 5 miles west of Project Area. The closest previous record is one mile west. There is limited nesting and abundant foraging habitat in the Project Area.
Tricolored blackbird (*Agelaius tricolor*)	No	**None:** Species is not known to occur in the vicinity of the site and there is no suitable habitat for the species on the site.
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	No	**Low:** Species is not known to occur in the vicinity of the site and there is limited suitable habitat for the species on the site.
Invertebrates		
Monarch butterfly (*Danaus plexippus*)	No	**None:** Species is not known to occur in the vicinity of the site and there is no suitable habitat or milkweed host plants for the species on the site.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	No	**None:** Species is not known to occur in the vicinity of the site and there is no suitable habitat for the species in the form of elderberry shrubs on the site.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	No	**None:** Species is not known to occur in the vicinity of the site and there is no suitable habitat for the species on the site.
Vernal pool tadpole shrimp *(Lepidurus packardi)*	No	**None:** Species is not known to occur in the vicinity of the site and there is no suitable habitat for the species on the site.
Mammals		
Fresno kangaroo rat (*Dipodomys nitratoides exilis*)	No	**None:** Species is not known to occur in the vicinity of the site and there is no suitable habitat for the species on the site.
San Joaquin kit fox (*Vulpes macrotis mutica*)	No	**Low:** Species is not known to occur in the vicinity of the site and there is limited potential suitable dispersal and foraging habitat for the species in the Project Area.
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	No	**None:** Species is not known to occur in the vicinity of the site and there is no suitable habitat for the species on the site.
Western mastiff bat (*Eumops perotis californicus*)	No	**Low:** Limited oak woodland roosting and moderate grassland foraging habitat for this species in the Project Area. The area is heavily farmed and maintained. Species is known from one record 2 miles southeast of Project Area.

Reptiles		
Blunt-nosed leopard lizard (*Gambelia sila*)	No	**None:** Species is not known to occur in the vicinity of the site and there is no suitable habitat for the Species in the Project Area.
Western pond turtle (*Actinemys marmorata*)	No	**Low:** Low quality potential habitat in the form of an open water unvegetated canal on the eastern edge and another just offsite to the northwest leave potential for this species to occur nearby. One historic occurrence of the species is known from four miles east of Project Area.
Plant Species Name	**Species Observed in Project Area**	**Potential For Occurrence in Project Area**
California jewelflower (*Caulanthus californicus*)	No	**Low.** The Project Area is active agricultural land and limited maintained grassland and oak woodland that is disced annually.
Ewan's larkspur (*Delphinium hanseni* ssp. *ewanianum*)	No	**Low.** The Project Area is active agricultural land and limited maintained grassland and oak woodland that is disced annually.
Recurved larkspur (*Delphinium recurvatum*)	No	**Low.** The Project Area is active agricultural land and limited maintained grassland and oak woodland that is disced annually.
Heartscale (*Atriplex cordulata* ssp. *cordulata*)	No	**Low.** The Project Area is active agricultural land and limited maintained grassland and oak woodland that is disced annually.
Lesser saltscale (*Atriplex minuscula*)	No	**Low.** The Project Area is active agricultural land and limited maintained grassland and oak woodland that is disced annually.
Subtle orache (*Atriplex subtilis*)	No	**Low.** The Project Area is active agricultural land and limited maintained grassland and oak woodland that is disced annually.

Table 3-7: Special Status Species Potentially on Project Site

Regulatory Setting

Federal Endangered Species Act (FESA): defines an endangered species as "any species or subspecies that is in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as "any species or subspecies that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."

The Federal Migratory Bird Treaty Act (FMBTA: 16 USC 703-712): FMBTA prohibits killing, possessing, or trading in any bird species covered in one of four international conventions to which the United States is a party, except in accordance with regulations prescribed by the

Secretary of the Interior. The name of the act is misleading, as it actually covers almost all birds native to the United States, even those that are non-migratory. The FMBTA encompasses whole birds, parts of birds, and bird nests and eggs. Although the USFWS and its parent administration, the U.S. Department of the Interior, have traditionally interpreted the FMBTA as prohibiting incidental as well as intentional "take" of birds, a January 2018 legal opinion issued by the Department of the Interior now states that incidental take of migratory birds while engaging in otherwise lawful activities is permissible under the FMBTA. However, California Fish and Game Code makes it unlawful to take or possess any non-game bird covered by the FMBTA (Section 3513), as well as any other native non-game bird (Section 3800), even if incidental to lawful activities.

Birds of Prey (CA Fish and Game Code Section 3503.5): Birds of prey are protected in California under provisions of the Fish and Game Code (Section 3503.5), which states that it is unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks and eagles) or Strigiformes (owls), as well as their nests and eggs. The bald eagle and golden eagle are afforded additional protection under the federal Bald and Golden Eagle Protection Act (16 USC 668), which makes it unlawful to kill birds or their eggs.

Clean Water Act: Section 404 of the Clean Water Act of (1972) is to maintain, restore, and enhance the physical, chemical, and biological integrity of the nation's waters. Under Section 404 of the Clean Water Act, the US Army Corps of Engineers (USACE) regulates discharges of dredged and fill materials into "waters of the United States" (jurisdictional waters). Waters of the US including navigable waters of the United States, interstate waters, tidally influenced waters, and all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries.

California Endangered Species Act (CESA): prohibits the take of any state-listed threatened and endangered species. CESA defines take as "any action or attempt to hunt, pursue, catch, capture, or kill any listed species." If the proposed project results in a take of a listed species, a permit pursuant to Section 2080 of CESA is required from the CDFG.

City of Visalia Oak Tree Ordinance: The City of Visalia has an oak tree ordinance that protects valley oak trees with a diameter at breast height (dbh) of 2 inches or greater. Under this ordinance, removal, or encroachment within the drip-line of or damage to valley oak trees is prohibited. Removal requires a permit from the city manager and mitigation either by replacement in-kind or payment of an in-lieu fee to be used for oak tree planting.

City of Visalia General Plan: The 2030 Visalia General Plan contains the following policies related to the preservation of biological resources that may be considered relevant to the proposed Project's environmental review:

- *OSC-P-8*: Protect, restore, and enhance a continuous corridor of native riparian vegetation along Planning Area waterways, including the St. Johns River; Mill, Packwood, and Cameron Creeks; and segments of other creeks and ditches where feasible, in conformance with the Parks and Open Space diagram of this General Plan.
- *OSC-P-19*: Establish easements or require dedication of land along waterways to protect natural habitat areas, allow maintenance operations and promote trails and bike paths.
- *OSC-P-26*: Establish Best Management Practices (BMPs) for control of invasive plant species where such plants could adversely impact wildlife habitat.
- *OSC-P-27*: Establish a "no net loss" standard for sensitive habitat acreage, including wetlands and vernal pools potentially affected by development.
- *OSC-P-30*: Require assessments of biological resources prior to approval of any discretionary development projects involving riparian habitat, wetlands, or special status species habitat. Early in the development review process, consult with California Department of Fish and Game, U.S. Fish and Wildlife Service, and other agencies.
- *OSC-P-31*: Protect and enhance habitat for special status species, designated under state and federal law. Require protection of sensitive habitat areas and special status species in new development in the following order: 1) avoidance; 2) onsite mitigation, and 3) offsite mitigation.

Discussion

a) Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish & Game or U.S. fish and Wildlife Service?

Less Than Significant Impact With Mitigation Incorporation: The Biological Resource Assessment (Appendix B) conducted for the proposed Project found that Swainson's hawk has a high potential to occur in the Project Area based on potential oak woodland nesting habitat, abundant foraging field and grassland habitat, and many previous CNDDB occurrences near the Project Area. Nuttall's woodpecker, a MBTA species and CDFW species of concern was observed foraging during the Habitat Assessment in the Project Area. San Joaquin kit fox, western yellow-billed cuckoo, western spadefoot toad, California tiger salamander, western mastiff bat, and western pond turtle have low potential to occur in the Project Area. While most of the Project Area is active agricultural land, the northwest portion of the Project Area includes approximately 5.6 acres of valley oak woodland and 4.4 acres of maintained annual grassland. This portion of the Project Area contains suitable potential habitat for these special-status species. Localized land management techniques including regular agricultural activity and routine land management for fire hazard abatement, such as discing, further reduces the potential for these species to occur in the proposed Project Area.

Based on the findings of the BRA, the proposed development of this property has the potential to impact nesting and foraging habitat for Swainson Hawk and other MBTA bird species, such as Nuttall's woodpecker, if any are found nesting in the trees within the Project Area. With incorporation of the Swainson Hawk and nesting bird mitigation measures below (Mitigation Measures BIO-1, BIO-1a, BIO-1b, BIO-1c), which include pre-construction nesting bird surveys and reporting, the proposed Project impacts to these species would be less than significant.

b) Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

Less Than Significant Impact: The Visalia General Plan identifies Grasslands, Valley Oak Riparian Woodland, Valley Oak Woodland, Vernal Pools, and Wetlands as natural communities to protect. The northwest portion of the Project Area has approximately 5.6 acres of Valley Oak Woodland. The Valley Oak Woodland has approximately 31 oak trees growing in it and may require an oak tree removal permit per the City of Visalia oak tree ordinance. If the oak trees are to be removed, the Project proponent pays the permit fees and requirements for the oak removal permit from the City for cutting and removing these trees to cover oak tree planting and establishment. The City of Visalia has an oak tree ordinance (Visalia Municipal Code Chapter 12.24) that protects valley oak trees with a

diameter at breast height (dbh) of 2 inches or greater. Under this ordinance, removal, or encroachment within the drip-line of or damage to valley oak trees is prohibited. Removal requires a permit from the city manager and mitigation either by replacement in-kind or payment of an in-lieu fee to be used for oak tree planting. Impacts would be *less than significant.*

c) Would the Project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through director removal, filling, hydrological interruption, or other means?

No Impact: An unvegetated maintained open water canal runs through the eastern portion of the site. However, the project would not affect the canal and leave a buffer surrounding the canal. No potentially jurisdictional wetlands occur in the Project Area. In regard to federally protected wetlands, the Project will have no impact.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant Impact: The proposed Project Area is primarily composed of cultivated agricultural lands surrounded by residential development and paved roads. Therefore, the proposed Project Area contains limited natural habitat that would be likely to function as a wildlife movement corridor. Due to the level of agricultural activity, residential development of the surrounding area, limited suitable undisturbed oak woodland and grassland habitat in the Project Area, and the occurrence of larger intact stands of valley oak woodland habitat immediately west of the Project Area, proposed Project impacts would be less than significant.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less Than Significant Impact: The proposed Project will result in the removal of approximately 32 valley oak (Quercus lobata) trees that are greater than 2" dbh. At least two of the valley oak trees on the property are greater than 24" dbh trees. One large approximately 36" dbh multi-trunk valley oak occurs in the middle of the property on the southern edge, while the remaining 31 valley oak trees are in the northwestern portion of the property. In the northern oak woodland stand, approximately 20 of the oak trees range from 12" to 24" dbh. One larger valley oak in this stand is approximately 30" dbh. The remaining 10 small oak trees range from 4" to 12" dbh. Removal of these oak trees would require an Oak Tree Permit. The City of Visalia has an oak tree ordinance (Visalia Municipal Code Chapter 12.24) that protects valley oak trees with a diameter at breast height (dbh) of 2 inches or greater. Under this ordinance, removal, or encroachment within the drip-line of or damage to valley oak trees is prohibited. Removal requires a permit from the city manager and mitigation either by replacement in-kind or payment of an in-lieu fee to be

used for oak tree planting. Visalia's ordinance protects valley oaks over 2 inches dbh, requiring a permit for removal and mandating replacement or a fee for tree planting. The impact would be *less than significant.*

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact: There are no known habitat conservation plans or Natural Community Conservation Plans (NCCP) in the proposed Project area. There would be *no impact.*

Mitigation Measures for Impacts to Biological Resources

Mitigation Measure BIO-1: Swainson's Hawk Nesting Habitat

If construction, grading, or Project-related improvements are to commence between March 1 and September 15, a focused survey for Swainson's hawk nests on the site and within ¼ mile of the site shall be conducted by a qualified biologist no later than 30 days prior to the start of construction work (including clearing and grubbing). If active nests are found, the California Fish and Wildlife shall be contacted to determine appropriate protective measures, and these measures shall be implemented prior to the start of any ground-disturbing activities. If no active nests are found during the focused survey, no further mitigation will be required.

Mitigation Measure BIO-1a: Nesting Bird and Roosting Bat Survey

If Project-related activities are scheduled between February 1 to August 31 (the typical nesting season), a focused survey for nests shall be conducted by a Designated Biologist within three (3) calendar days prior to the beginning of Project-related activities. The Designated Biologist shall survey a minimum radius of 500-feet for MBTA birds around the Project Area and for sign of roosting bats. If no active nests or roosts are found, project activities may proceed as scheduled.

Mitigation Measure BIO-1b: Active Nests or Roosts

If an active nest or roost is found, active nests should be avoided, and a no disturbance or destruction buffer shall be determined and established by a Designated Biologist through consultation with CDFW. A report will be prepared documenting any active nest(s) and CDFW will be contacted and consulted in order to approve an adequate buffer size for the species. The buffer shall be kept in place until after the breeding nesting season or the Designated Biologist confirms the young have fledged, are foraging independently, and the nest is no longer active for the season. The extent of these buffers shall be determined by CDFW and established by the Designated Biologist and will depend on the species present, the level of noise or construction disturbance, line of sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers.

Mitigation Measure BIO-1c: Project Delay

If a lapse in project-related work of fourteen (14) calendar days or longer occurs, the Designated Biologist shall complete another focused survey before Project work can be reinitiated.

V. CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☑	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☑	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☑	☐	☐

A Phase 1 cultural resources assessment for the Elliott Property Subdivision was conducted by SOAR Environmental Consulting (Appendix C). The Project proposes to construct a 225-unit, low-density single-family development and a 4.15-acre park. The Project is subject to the California Environmental Quality Act (CEQA).

Environmental Setting

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. Yokuts villages apparently extended up to, but not into, the mouths of the canyons on the northern and western fronts of the Tehachapi Mountains, well into the foothills and lower elevations of the Sierra Nevada on the east, and to the crest of the Temblor Range on the west. The Yokuts are Penutian speakers and are linguistically related to northern occupants of the San Joaquin Valley. The Yokuts settlement pattern was largely consistent, regardless of the specific tribe involved. Winter villages were typically located along lakeshores and major stream courses (as these existed circa AD 1800), with dispersal phase family camps located at elevated spots on the valley floor and near gathering areas in the foothills. Throughout Native California, and Yokuts territory in general, the acorn was a primary dietary component, along with a variety of gathered seeds. Valley tribes augmented this resource with lacustrine and riverine foods, especially fish and wildfowl. Although population estimates vary and population size was greatly affected by the introduction of Euro-American diseases and social disruption, the Yokuts were one of the largest, most successful groups in Native California. Cook (1978) estimates that the Yokuts region contained 27 percent of the aboriginal population in the state at the time of contact; other estimates are even higher. Many Yokuts people continue to reside in the southern San Joaquin Valley today.

In California, the historic era is divided into three general periods: the Spanish or Mission Period (1769 to 1821), the Mexican or Rancho Period (1821 to 1848), and the American Period (1848 to present). The mission system, which ultimately established 21 missions between 1796 and 1822,

consisted of missions, presidios, and pueblos, and was designed to convert the indigenous peoples of California to Christianity and assimilate them under Spanish rule (Gudde 1998).
Visalia, then called Four Creeks, was settled in 1852. In this same year Tulare County was officially formed from parts of Mariposa County. In these early years Visalia was used as a supply center for the nearby gold mining operations along the Kern River. During this time Visalia's agricultural economy was based predominantly around livestock. The Southern Pacific Railroad constructed train tracks throughout the San Joaquin Valley, and with this a shift was triggered in Visalia's agricultural economy to one revolving around field crops. By 1874 Visalia was incorporated as a city in Tulare County. The next major economic change was brought about by the increased availability of irrigation water, resulting in the conversion of large grain fields to small farms, where citrus, grapes, olives, and deciduous fruits were raised. These crops are a mainstay of the region's economy today (City of Visalia, 2023).

Cultural Records Search

On October 13, 2023, Soar submitted a records search request to the Southern San Joaquin Valley Information Center (SSJVIC) located at the California State University, Bakersfield (Appendix A of Cultural Resources Assessment). The purpose of this request was to identify any prehistoric or historical resources on or near the Project Site that had been previously recorded within the Project boundary and a 0.5-mile radius of the Project area and identify and review prior cultural resource investigations completed in or near the Project boundary. SSJVIC staff researched historical USGS topographic maps, reports of previous cultural resource investigations, archaeological Site and survey base maps, cultural resource records (DPR forms) as well as listings of the Historic Properties Directory of the Office of Historic Preservation, General Land Office Maps, Archaeological Determinations of Eligibility, and the California Inventory of Historic Resources. The results from the records search indicate two (2) cultural resource studies have been conducted within the Project area. According to the information on file, there is one (1) resource within the Project area. There are two (2) recorded resources within the 0.5-mile record search radius. There were seven (7) reports identified within a 0.5-mile radius of the Project area. There are no recorded cultural resources within the Project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, or the California State Historic Landmarks.

Native American Consultation

The State requires lead agencies to consider the potential effects of proposed projects and consult with California Native American tribes during the local planning process for the purpose of protecting Traditional Tribal Cultural Resources through the California Environmental Quality Act (CEQA) Guidelines. Pursuant to PRC Section 21080.3.1, the lead agency shall begin consultation with the California Native American tribe that is traditionally and culturally affiliated with the geographical area of the proposed project. Such significant cultural resources are either sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a tribe which is either on or eligible for inclusion in the California Historic Register or local historic register, or, the lead agency, at its discretion, and support by

substantial evidence, choose to treat the resources as a Tribal Cultural Resources (PRC Section 21074(a) (1-2)).

Additional information may also be available from the California Native American Heritage Commission's Sacred Lands File per PRC Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that PRC Section 21082.3(c) contains provisions specific to confidentiality.

The site contains agricultural uses, vacant land, and an oak grove. If any artifacts are inadvertently discovered during ground-disturbing activities, existing federal, State, and local laws, and regulations as well as the mitigation measures will require construction activities to cease until such artifacts are properly examined and determined not to be of significance by a qualified cultural resource professional.

The California Native American Heritage Commission (NAHC) was contacted by SOAR Environmental Consulting on October 13, 2023, to conduct a Sacred Lands File (SLF) search, and to obtain a list of tribes culturally and geographically affiliated with the Project area (Appendix B of IS/MND Appendix C). On December 1st, 2023, the NAHC indicated there are no Native American traditional cultural places or sacred sites within or near the Project area. The NAHC provided a list of five (5) Tulare County Native American groups and individuals affiliated with the local tribes. On December 4th, 2023, Ms. Froshour sent letters to all individuals describing the location, and the nature of the project. In each letter, Ms. Froshour included a request for information regarding prehistoric, historic, ethnographic land use, as well as contemporary Native American values. Soar Environmental did not receive comments from the Tulare County Native American groups or affiliated individuals regarding the proposed development at the project location.

Following AB 52, Native American Tribes that could potentially be impacted by the Project were contacted. The Tribes that were formally noticed of this Project were:

- Big Sandy Rancheria of Western Mono Indians
- Dunlap Band of Mono Indians
- Kern Valley Indian Community
- Santa Rosa Rancheria Tachi Yokut Tribe
- Tubatulabals of Kern Valley
- Tule River Indian Tribe
- Wuksache Indian Tribe/Eshom Valley Band

The City did not receive any comments for this project.

Regulatory Setting

In this report "cultural resources" are defined as prehistoric or historical archaeological sites as well as historical objects, buildings, or structures. In accordance with 30 Code of Federal Regulations (CFR) §60.4, "historical" in this report applies to cultural resources which are at least 50 years old. The significance or importance of a cultural resource is dependent upon whether the resource qualifies for inclusion at the local or state level in the California Register of Historical Resources (CRHR), or at the federal level in the National Register of Historic Places (NRHP). Cultural resources that are determined to be eligible for inclusion in the CRHR are called "historical resources" (California Code of Regulations [CCR] 15064.5[a]). Under this statue the determination of eligibility is partially based on the consideration of the criteria of significance as defined in 14 CCR 15064.5(a)(3). Cultural resources eligible for inclusion in the NRHP are deemed "historic properties."

National Historic Preservation Act

The National Historic Preservation Act was adopted in 1966 to preserve historic and archeological sites in the United States. The Act created the National Register of Historic Places, the list of National Historic Landmarks, and the State Historic Preservation offices.

California Historic Register

The California Historic Register was developed as a program to identify, evaluate, register, and protect Historical Resources in California. Historical resources may include, but are not limited to, "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically or archaeologically significant" (PRC §5020.1[j]). In addition, a resource included in a local register of historical resources or identified as significant in a local survey conducted in accordance with the state guidelines are also considered historic resources under California Public Resources Code (PRC) Section 5020.1.

According to CEQA guidelines §15064.5 (a)(3), criteria for listing on the California Register of Historical Resources includes the following:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- Is associated with the lives of persons important in our past.
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- Has yielded, or may be likely to yield, information important in prehistory or history.

Protection of cultural resources within California is additionally regulated by PRC §5097.5, which prohibits destruction, defacing, or removal of any historic or prehistoric cultural features on land under the jurisdiction of State or local authorities.

City of Visalia General Plan

The 2030 General Plan includes the policies related to cultural resources that correlate to the proposed project:

- *LU-P-48*: Preserve established and distinctive neighborhoods throughout the City by maintaining appropriate zoning and development standards to achieve land use compatibility in terms of height, massing, and other characteristics; providing design guidelines for high-quality new development; supporting housing rehabilitation programs; and other means.
- *OSC-P-42*: Establish requirements to avoid potential impacts to sites suspected of being archeologically, paleontologically, or historically significant or of concern, by:
    - Requiring a records review for development proposed in areas that are considered archaeologically or paleontologically sensitive;
    - Determining the potential effects of development and construction on archaeological or paleontological resources (as required by CEQA);
    - Requiring pre-construction surveys and monitoring during any ground disturbance for all development in areas of historical and archaeological sensitivity (defined as areas identified according to the National Historic Preservation Act as part of the Section 106 process); and
    - Implementing appropriate measures to avoid the identified impacts, as conditions of Project approval.

Discussion

a) Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

Less Than Significant Impact with Mitigation: A records search was conducted on behalf of the Applicant from the SSJVIC of the CHRIS at California State University in Bakersfield, California, to determine if historical or archaeological sites had previously been recorded within the study area, if the Project area had been systematically surveyed by archaeologists prior to the initial study, and/or whether the region of the field Project was known to contain archaeological sites and to thereby be archaeologically sensitive.

According to the SSJVIC records search, there has been two previous cultural resource investigations within the Project area (TU-00041, TU-01190). From these two investigations, one historical resource has been identified in the Project area (P-54-002177). There has been seven reports conducted within a 0.5-mile radius of the Project area, and two recorded resources have been found within the 0.5-mile record search radius (P-54-003667, P-54-003670). The historical resource identified within the project area is the South Fork Persian Ditch, which is a nineteenth century earthenware irrigation ditch, which was constructed between the years 1854 and 1856 by farmers and other water users in the area.

After an analysis of the significance of the structure, SOAR determined that the South Fork Persian Ditch lacks significance and is not eligible for the National Register of Historic Places (NRHP).

Although cultural resources were identified on the site, the South Fork Ditch is not NRHP eligible, so no historic places will be affected. The Project is not located within any known historic districts or landscapes, and the construction would be limited to the 59.13-acre property and the 4.15-acre park, so no historically significant resources would be affected. However, the presence of remains or unanticipated cultural resources under the ground surface is possible. Implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and CUL-4 will ensure that impacts to this checklist item will be *less than significant with mitigation* incorporation.

b) Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less Than Significant Impact with Mitigation: There are no known archaeological resources located within the Project area. Implementation of Mitigation Measures CUL-1 and CUL-2 will ensure that potential impact to unknown archeological resources will be *less than significant with mitigation* incorporation.

c) Would the Project disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact with Mitigation: There are no known human remains buried in the Project vicinity. If human remains are unearthed during Project construction, there is a potential for a significant impact. As such, implementation of Mitigation Measure CUL-2 will ensure that impacts remain *less than significant with mitigation incorporation.*

Mitigation Measures for Impacts to Cultural Resources

Mitigation Measure CUL-1: If previously unknown resources are encountered before or during grading activities, construction shall stop in the immediate vicinity of the find and a qualified historical resources specialist shall be consulted to determine whether the resource requires further study. The qualified historical resources specialist shall make recommendations to the City on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with Section 15064.5 of the CEQA Guidelines and the City's Historic Preservation Ordinance.

If the resources are determined to be unique historical resources as defined under Section 15064.5 of the CEQA Guidelines, measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate measures for significant resources could

include avoidance or capping, incorporation of the Site in green space, parks, or open space, or data recovery excavations of the finds. No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any historical artifacts recovered as a result of mitigation shall be provided to a City-approved institution or person who is capable of providing long-term preservation to allow future scientific study.

Mitigation Measure CUL-2: In the event that human remains are unearthed during excavation and grading activities of any future development project, all activity shall cease immediately. Pursuant to Health and Safety Code (HSC) Section 7050.5, no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98(a). If the remains are determined to be of Native American descent, the coroner shall within 24 hours notify the Native American Heritage Commission (NAHC). The NAHC shall then contact the most likely descendent of the deceased Native American, who shall then serve as the consultant on how to proceed with the remains. Pursuant to PRC Section 5097.98(b), upon the discovery of Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.

Mitigation Measure CUL-3: Prior to the start of construction, an archaeological firm shall be hired to conduct a pre-construction survey and submit a comprehensive report to the lead agency for review and approval prior to the start of construction. This report should document the findings of the pre-construction survey and include an assessment of the potential impacts of the proposed Project on any identified archaeological resources. The plan should outline specific measures that will be implemented, such as construction phasing, Site buffering, and artifact preservation, to protect the cultural resources, if any are discovered. To ensure compliance, the Project approval should require that the archaeological survey report and the associated plan be prepared by a qualified archaeologist and that the survey and monitoring activities be conducted in accordance with relevant state and federal regulations and best practices. By requiring a comprehensive archaeological survey report and a detailed mitigation plan, the lead agency can ensure that any impacts to archaeological resources are avoided or minimized to the fullest extent possible.

Mitigation Measure CUL-4: During any ground disturbing activities, an archaeological firm shall be hired to monitor the Project Site. The monitoring should be conducted by a qualified archaeologist with experience in the region and in compliance with relevant state and federal regulations and best practices. The monitoring should include regular Site

inspections to identify any archaeological resources that may have been uncovered during ground-disturbing activities. If any resources are identified, the monitoring should also include documentation, mapping, and analysis of the resources, as well as the development of a mitigation plan to address any potential impacts to the resources.

VI. ENERGY

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?	☐	☐	☑	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☑

Environmental Setting

Southern California Edison (SCE) provides electricity services to the City of Visalia. SCE serves approximately 15 million people in a 50,000 square-mile area of Central, Coastal, and Southern California. SCE supplies electricity to its customers through a variety of renewable and nonrenewable sources. Table 3-8 below shows the proportion of each energy resource sold to California consumers by SCE in 2021 as compared to the statewide average.

Fuel Type		SCE Power Mix	California Power Mix
Coal		0%	3.0%
Large Hydroelectric		2.3%	9.2%
Natural Gas		22.3%	37.9%
Nuclear		9.2%	9.3%
Other (Oil/Petroleum Coke/Waste Heat)		0.2%	0.2%
Unspecified Sources of Power[1]		34.6%	6.8%
Eligible Renewables	Biomass	0.1%	2.3%
	Geothermal	5.7%	4.8%
	Small Hydro	0.5%	1.0%
	Solar	14.9%	14.2%
	Wind	10.2%	11.4%
	Total Eligible Renewable	**31.4%**	**33.6%**
1. "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources.			

Table 3-8. 2021 SCE and State power resources; Source: SCE; California Energy Commission

SCE also offers Green Rate Options, which allow consumers to indirectly purchase up to 100% of their energy from renewable sources. To accomplish this, SCE purchases the renewable energy necessary to meet the needs of Green Rate participants from solar renewable developers.

Southern California Gas Company (SoCalGas) provides natural gas services to the Project area. Natural gas is an energy source developed from fossil fuels composed primarily of methane (CH4). Approximately 45% of the natural gas burned in California is used for electricity generation, while 21% is consumed by the residential sector, 25% is consumed by the industrial sector, and 9% is consumed by the commercial sector.

Regulatory Setting

California Code of Regulations, Title 20

Title 20 of the California Code of Regulations establishes standards and requirements for appliance energy efficiency. The standards apply to a broad range of appliances sold in California.

California Code of Regulations, Title 24

Title 24 of the California Code of Regulations is a broad set of standards designed to address the energy efficiency of new and altered homes and commercial buildings. These standards regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. Title 24 requirements are enforced locally by the City of Selma Building Department.

California Green Building Standards Code (CALGreen)

CalGreen is a mandatory green building code that sets minimum environmental standards for new buildings. It includes standards for volatile organic compound (VOC) emitting materials, water conservation, and construction waste recycling.

SB 100

SB 100, passed in 2018, set a deadline in 2045 for 100% of energy to be renewable. Additionally, by 2030, 60% of all energy must be renewable. California is targeting this goal through solar and other renewable sources.

AB 178

For California to meet its renewable goals, AB 178 was passed in 2018. AB 178 states that starting in 2020 all new low-rise residential buildings must be built with solar power.

City of Visalia General Plan

The 2030 General Plan includes the policies related to energy use that correlate to the proposed project:

- *T-P-41*: Integrate the bicycle transportation system into new development and infill redevelopment. Development shall provide short-term bicycle parking and long-term bicycle storage facilities, such as bicycle racks, stocks, and rental bicycle lockers. Development also shall provide safe and convenient bicycle and pedestrian access to high-activity land uses such as schools, parks, shopping, employment, and entertainment centers.
- *T-P-53*: Develop flexible parking requirements in the zoning ordinance for development proposals based on "best practices" and the proven potential to reduce parking demand.

Discussion

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?

Less Than Significant Impact: The proposed Project includes the construction and operation of single-family housing. During Project construction, there would be an increase in energy consumption related to worker trips and operation of construction equipment. This increase in energy use would be temporary and limited to the greatest extent possible through compliance with local, state, and federal regulations. Vehicle fuel consumption during Project construction was estimated based on the assumed construction schedule, vehicle trip lengths, and the number of workers per construction phase as provided by CalEEMod, and Year 2023 gasoline/diesel MPG factors provided by the EMFAC2017. To simplify the estimation process, it was assumed that all worker vehicles used gasoline as a fuel source and all vendor vehicles used diesel as a fuel source. Table 3-9, below, provides gasoline and diesel fuel used by construction and on-road sources during each phase of Project construction.

Construction Phase	# of Days	Daily Worker Trips[1]	Daily Vendor Trips[1]	Daily Hauling Trips[1]	Total Gasoline Fuel Use (gallons)[2]	Total Diesel Fuel Use (gallons)[2]
Site Preparation	40	18	0	0	7,799	0
Grading	110	20	0	0	33,871	0
Building Construction	1110	81	24	0	177,549	23,069
Paving	75	15	0	0	8,836	0
Architectural Coating	75	16	0	0	1,410	0
Total	**1410**	**N/A**	**N/A**	**N/A**	**229,465**	**23,069**

1. Data provided by CalEEMod (Appendix A)

Table 3-9. On-Road Mobile Fuel Use Generated by Construction Activities. Source: CalEEMod(v. 2020.4.0); EMFAC2014

While construction of the proposed Project will result in additional energy consumption, this energy use is not unnecessary or inefficient. This energy use is justified by the energy-efficient nature of the proposed Project and would be limited to the greatest extent possible through compliance with local, state, and federal regulations. Once construction is complete, the Project is expected to achieve net zero energy consumption. The proposed Project is subject to the California New Residential Zero Net Energy Action Plan 2015-2020. This plan establishes a goal for all residential buildings built after January 1, 2020, to be zero net energy. The California Energy Commission is responsible for the development and enforcement of specific strategies to achieve this goal. These strategies are implemented through Title 24, Part 6 of the California Building Code, which requires developers to include certain measures (including solar panels on all new residential buildings) to achieve required building efficiency standards.

Total Annual Operational VMT[1]	Annual Fuel Use (Gasoline)	Annual Fuel Use (Diesel)	Average MPG
5,889,125 Miles	**225,635 Gallons**	**25,324 Gallons**	**23.5**

1. Data Provided by CalEEMod

Table 3-10. On-Road Mobile Fuel Use Generated by Operational Activities. Source CalEEMod (v. 2020.4.0); EMFAC2014

During Project operations, the proposed Project is not anticipated to result in wasteful fuel consumption. This is due to the distance of the Project Site to the commercial, recreational, and other residential uses, resulting in less of a reliance on personal vehicles. Because construction-related energy use would be temporary and limited to

the greatest extent feasible through consistency with Federal, State, and local policies related to energy conservation, and operation of the Project will comply with all energy efficiency standards required under Title 24, Section 6, and these standards were specifically developed to achieve net zero energy for residential projects, it can be presumed that the Project will achieve net zero energy. The Project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. The impact is *less than significant.*

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact: The proposed Project will not conflict with or obstruct any state or local plans for renewable energy or energy efficiency. The proposed Project will comply with all state and local policies related to energy efficiency and there is *no impact*.

VII. GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☑
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☑
ii) Strong seismic ground shaking?	☐	☐	☐	☑
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☑
iv) Landslides?	☐	☐	☐	☑
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☑	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-Site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☑
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct and indirect risks to life or property?	☐	☐	☐	☑
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☑
f) Directly or indirectly destroy a unique paleontological resource or Site or unique geologic feature?	☐	☑	☐	☐

Environmental Setting

Geologic Stability and Seismic Activity

- **Seismicity**

The Visalia Planning Area has no known major fault systems within its boundaries. There are small faults in the Southern San Joaquin Valley, approximately 30 miles away, though none of them are known to be active. The greatest potential for seismic activity in Visalia Planning Area is posed by the San Andreas Fault, approximately 75 miles away from the site, or the Owens Valley Fault Group, which is located approximately 125 miles away from the Project site.

- **Liquefaction**
  Liquefaction is a phenomenon whereby unconsolidated and/or near saturated soils lose cohesion and are converted to a fluid state as a result of severe vibratory motion. The relatively rapid loss of soil shear strength during strong earthquake shaking results in temporary, fluid-like behavior of the soil, which can result in landslides and lateral spreading. Soil liquefaction causes ground failure that can damage roads, pipelines, underground cables, and buildings with shallow foundations. Liquefaction hazards may exist in and around wetland areas and creeks, though soil types are generally too coarse or too high in clay content, and not likely to be subject to sufficient acceleration to cause liquefaction.

- **Landslides**
  Landslides refer to a wide variety of processes that result in the downward and outward movement of soil, rock, and vegetation under gravitational influence. Landslides are caused by both natural and human-induced changes in slope stability and often accompany other natural hazard events, such as floods, wildfire, or earthquake. Due to little elevation changes throughout the planning area, including the proposed Project site, it is considered a low landslide hazard area.

- **Subsidence**
  Land Subsidence refers to the vertical sinking of land because of either manmade or natural underground voids. Subsidence has occurred throughout the Central Valley because of groundwater, oil, and gas withdrawal. The Kaweah Subbasin that underlies the Planning Area is in an overdraft condition on an average long-term basis. According to the most recent Urban Water Management Plan (UWMP), groundwater elevations have declined up to 50 feet between 1990 and 2010. While groundwater recharge efforts are in progress, groundwater levels will continue to decline unless recharge is increased.

Soils Involved in Project

The proposed Project involves construction on two soil types. The properties of the soil are described briefly below:

- **Nord Fine Sandy Loam:** The Nord series consists of very deep, well drained soils that formed in mixed alluvium dominantly from granitic and sedimentary rocks and has

slopes of 0 to 2 percent. It is well drained; has negligible to low runoff; and has moderate permeability but is moderately slow in saline-sodic phases.

- **Akers, Saline Sodic:** The Akers series consists of very deep, well drained soils formed in alluvium derived from granitic rock. Akers soils are on terraces and has slopes of 0 to 2 percent. It is well drained; has negligible to low runoff; and has moderate permeability. Saline-sodic phases have moderately slow permeability.

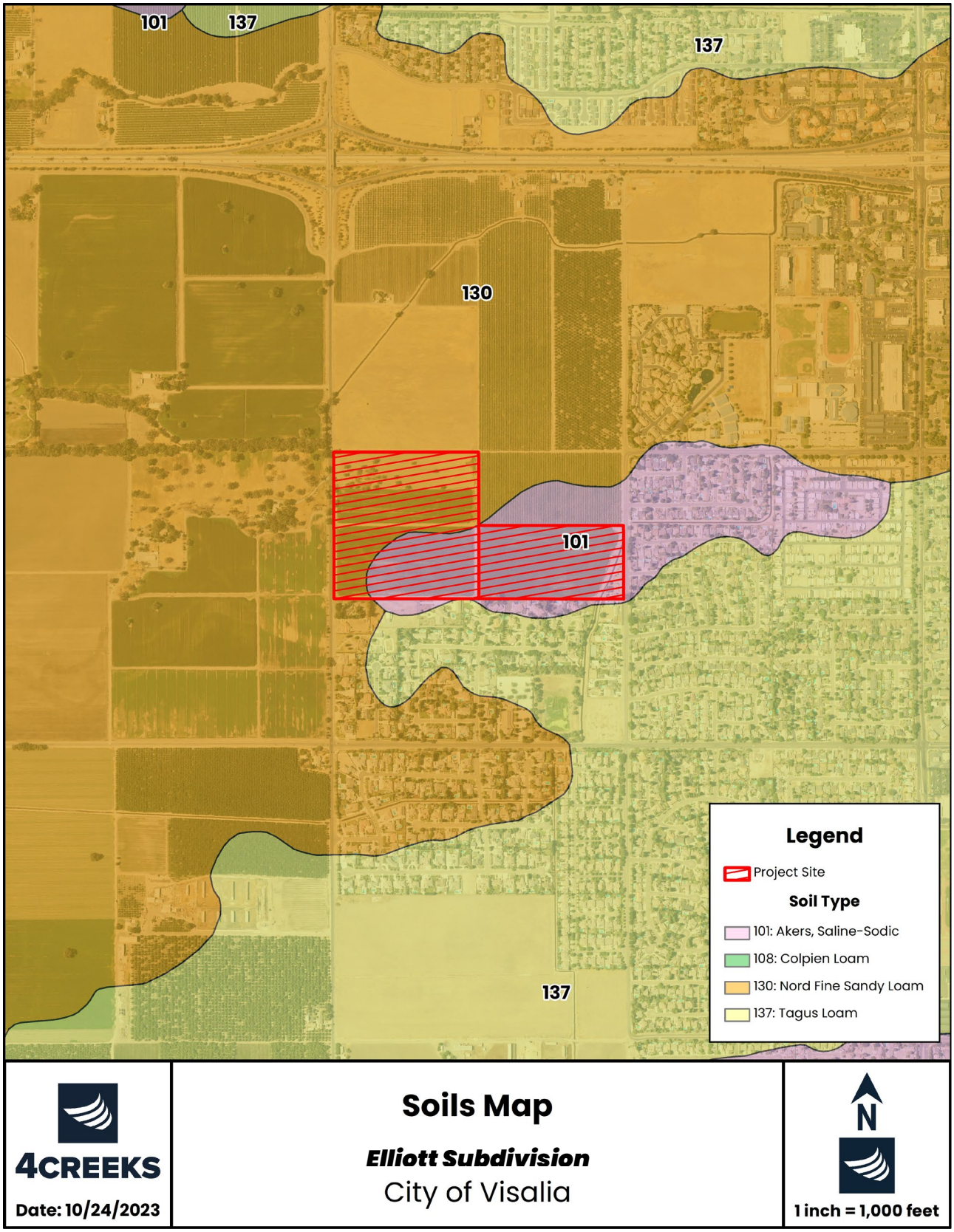


Figure 3-4: Soils Map

Regulatory Setting

California Building Code

The California Building Code (CBC) contains general building design and construction requirements relating to fire and life safety, structural safety, and access compliance. CBC provisions provide minimum standards to safeguard life or limb, health, property, and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location and maintenance of all buildings and structures, and certain equipment.

City of Visalia Municipal Code (California Building Code)

The City of Visalia Municipal Code has incorporated and adopted the CBC, 2013 Edition, as promulgated by the California Building Standards Commission, which incorporates the adoption of the 2012 edition of the International Building Code, as amended with necessary California amendments and the 2012 International Building Code of the International Code Council.

City of Visalia General Plan

The 2030 General Plan includes the policies related to geology and soils that correlate to the proposed project:

- *OSC-P-28*: Require new development to implement measures, as appropriate, to minimize soil erosion related to grading, Site preparation, landscaping, and construction.

Discussion

a) Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

No Impact: Although the Project is located in an area of relatively low seismic activity, the Project Site has a low chance of being affected by ground shaking from distant faults. The potential for strong seismic ground shaking on the Project Site is not a significant environmental concern due to the infrequent seismic activity of the area and the distance to the faults. The Project does not propose any components which could cause substantial adverse effects in the event of an earthquake. Additionally, the Project has no potential to indirectly or directly cause the rupture of an earthquake fault. Therefore, there is *no impact* related to the risk of loss, injury, or death involving a rupture of a known earthquake fault.

ii. Strong seismic ground shaking?

No Impact: The Project Site is in an area of low seismic activity. The proposed Project does not include any activities or components that could feasibly cause strong seismic ground shaking, either directly or indirectly. There is *no impact.*

iii. Seismic-related ground failure, including liquefaction?

No Impact: The risk of liquefaction within the planning area outside of wetland areas is low because the soil types are generally unsuitable for liquefaction. The area's low potential for seismic activity would further reduce the likelihood of liquefaction occurrence. Because the Project Site is within an area of low seismic activity, and the soils associated with the Project area are not suitable for liquefaction, there are *no impacts.*

iv. Landslides?

No Impact: The Planning Area of Visalia is considered at insignificant risk of small landslides. Additionally, the Project Site is generally flat and there are no hill slopes in the area. No geologic landforms exist on or near the Site that would result in a landslide event. As a result, there is a very low potential for landslides. There would be *no impact.*

b) Would the Project result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact: Because the Project Site is relatively flat, the potential for erosion is low. However, construction-related activities and increased impermeable surfaces can increase the probability of erosion to occur. Construction-related impacts related to erosion will be temporary and subject to best management practices (BMPs) required by SWPPP, which are developed to prevent significant impacts related to erosion from construction. Because impacts related to erosion would be temporary and limited to construction, and because required best management practices would prevent significant impacts related to erosion, the impact will remain *less than significant.*

c) Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-Site landslide, lateral spreading, subsidence, liquefaction or collapse?

No Impact: The soils associated with the Project Site are considered stable and have a low capacity for landslides, lateral spreading, subsidence, liquefaction, or collapse. Because the Project area is stable, and this Project would not result in a substantial grade change to the topography to the point that it would increase the risk of landslides, lateral spreading, subsidence, liquefaction, or collapse, there is *no impact.*

d) Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

No Impact: The proposed Project Site is not in an area with expansive soils. Because the soils associated with the Project do not exhibit shrink-swell behavior, implementation of the Project will pose no risk to life or property caused by expansive soils and there is *no impact.*

e) Would the Project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?

No Impact: The proposed Project would not include the use of septic tanks or any other alternative wastewater disposal systems. The proposed buildings will tie into Visalia's existing sewer services. Therefore, there would be *no impact.*

f) Would the Project directly or indirectly destroy a unique paleontological resource or Site or unique geologic feature?

Less Than Significant Impact with Mitigation: There are no unique geologic features and no known paleontological resources located within the Project area. However, there is always the possibility that paleontological resources may exist below the ground surface. Implementation of Mitigation Measures CUL-1 and CUL-2 will ensure that any impacts resulting from Project implementation remain less than significant with mitigation incorporation.

Mitigation Measures for Impacts to Geological Resources

Mitigation Measure CUL-1: If previously unknown resources are encountered before or during grading activities, construction shall stop in the immediate vicinity of the find and a qualified historical resources specialist shall be consulted to determine whether the resource requires further study. The qualified historical resources specialist shall make recommendations to the City on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with Section 15064.5 of the CEQA Guidelines and the City's Historic Preservation Ordinance.

If the resources are determined to be unique historical resources as defined under Section 15064.5 of the CEQA Guidelines, measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate measures for significant resources could include avoidance or capping, incorporation of the Site in green space, parks, or open space, or data recovery excavations of the finds. No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any historical artifacts recovered as a result of mitigation shall be provided to a City-

approved institution or person who is capable of providing long-term preservation to allow future scientific study.

Mitigation Measure CUL-2: In the event that human remains are unearthed during excavation and grading activities of any future development project, all activity shall cease immediately. Pursuant to Health and Safety Code (HSC) Section 7050.5, no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98(a). If the remains are determined to be of Native American descent, the coroner shall within 24 hours notify the Native American Heritage Commission (NAHC). The NAHC shall then contact the most likely descendent of the deceased Native American, who shall then serve as the consultant on how to proceed with the remains. Pursuant to PRC Section 5097.98(b), upon the discovery of Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.

VIII. GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☑	☐
a) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☑

Environmental Setting

Natural processes and human activities emit greenhouse gases. The presence of GHGs in the atmosphere affects the earth's temperature. Without the natural heat-trapping effect of GHGs, the earth's surface would be about 34°C cooler. However, it is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

The effect of greenhouse gases on the earth's temperature is equivalent to the way a greenhouse retains heat. Common GHGs include water vapor, carbon dioxide, methane, nitrous oxide, ozone, chlorofluorocarbons, hydrochlorofluorocarbons, hydro fluorocarbons, per fluorocarbons, sulfur, and hexafluoride. Some gases are more effective than others. The Global Warming Potential (GWP) has been calculated for each greenhouse gas to reflect how long it remains in the atmosphere, on average, and how strongly it absorbs energy. Gases with a higher GWP absorb more energy, per pound, than gases with a lower GWP, and thus contribute more to global warming. For example, one pound of methane is equivalent to twenty-one pounds of carbon dioxide.

GHGs as defined by AB 32 include the following gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. GHGs as defined by AB 32 are summarized in Table 3-11. Each gas's effect on climate change depends on three main factors. The first is the quantity of these gases in the atmosphere, followed by how long they stay in the atmosphere, and finally how strongly they impact global temperatures.

Greenhouse Gas	Description and Physical Properties	Lifetime	GWP	Sources
Methane (CH4)	Is a flammable gas and is the main component of natural gas	12 years	21	Emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.
Carbon dioxide (CO2)	An odorless, colorless, natural greenhouse gas.	30-95 years	1	Enters the atmosphere through burning fossil fuels (coal, natural gas, and oil), solid waste, trees and wood products, and also as a result of certain chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
Chloro-fluorocarbons	Gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are non-toxic nonflammable, insoluble and chemically unreactive in the troposphere (the level of air at the earth's surface).	55-140 years	3,800 to 8,100	Were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone.
Hydro-fluorocarbons	A man-made greenhouse gas. It was developed to replace ozone-depleting gases found in a variety of appliances. Composed of a group of greenhouse gases containing carbon, chlorine an at least one hydrogen atom.	14 years	140 to 11,700	Powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for stratospheric ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases.

Greenhouse Gas	Description and Physical Properties	Lifetime	GWP	Sources
Nitrous oxide (N2O)	Commonly known as laughing gas, is a chemical compound with the formula N2O. It is an oxide of nitrogen. At room temperature, it is a colorless, non-flammable gas, with a slightly sweet odor and taste. It is used in surgery and dentistry for its anesthetic and analgesic effects.	120 years	310	Emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.
Pre-fluorocarbons	Has a stable molecular structure and only breaks down by ultraviolet rays about 60 kilometers above Earth's surface.	50,000 years	6,500 to 9,200	Two main sources of pre-fluorocarbons are primary aluminum production and semiconductor manufacturing.
Sulfur hexafluoride	An inorganic, odorless, colorless, and nontoxic nonflammable gas.	3,200 years	23,900	This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing and as a tracer gas.

Table 3-11. Greenhouse Gasses; Source: EPA, Intergovernmental Panel on Climate Change

Regarding the quantity of these gases in the atmosphere, we first must establish the amount of the particular gas in the air, known as Concentration, or abundance, which is measured in parts per million, parts per billion, and even parts per trillion**.** To put these measurements in more relatable terms, one part per million is equivalent to one drop of water diluted into about 13 gallons of water, roughly a full tank of gas in a compact car. Therefore, it can be assumed larger emissions of greenhouse gases lead to a higher concentration in the atmosphere.

Each of the designated gases described above can reside in the atmosphere for different amounts of time, ranging from a few years to thousands of years. All these gases remain in the atmosphere long enough to become well mixed, meaning that the amount that is measured in the atmosphere is roughly the same all over the world regardless of the source of the emission.

Regulatory Setting

AB 32

AB 32 set the 2020 greenhouse gas emissions reduction goal into law. It directed the California Air Resources Board to begin developing discrete early actions to reduce greenhouse gases while also preparing a scoping plan to identify how best to reach the 2020 limit. The reduction measures to meet the 2020 target are to be adopted by the start of 2011.

SB 1078, SB 107, and Executive Order S-14-08
SB 1078, SB 107, and Executive Order S-14-08 require California to generate 20% of its electricity from renewable energy by 2017. SB 107 then changed the 2017 deadline to 2020. Executive Order S-14-08 required that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020.

San Joaquin Valley Air Pollution Control District
SJVAPCD adopted a Climate Change Action Plan (CCAP) in August 2008. While the plan does not have regulatory powers, it directs SJVAPCD to develop guidance to assist District staff, valley businesses, land-use agencies, and other permitting agencies in addressing GHG emissions as part of the CEQA process.

City of Visalia Climate Action Plan (CAP)
Visalia's draft 2013 CAP includes a baseline GHG emissions inventory of municipal and community emissions, identification, and analysis of existing and proposed GHG reduction measures, and reduction targets to help Visalia work toward the State's goal of an 80 percent reduction below baseline emissions by 2050. The plan sets 2020 and 2030 reduction targets and includes reduction actions for energy, transportation, and waste and resource conservation.

City of Visalia Climate Change Initiatives
In January 2007, Visalia's mayor signed the "Cool Cities" pledge, part of the U.S. Mayors Climate Protection Agreement. By entering into this agreement, the City has adopted the goal of reducing citywide GHG emissions to 7% below 1990 levels by 2012. As detailed in the CAP, this goal was subsequently expanded in response to ARB's recommended reduction target of 15% below the 2005 baseline, and the City added a 2030 mitigation target to correlate with the 2030 General Plan Update and the goal of achieving an 80% reduction by 2050.

Discussion

a) Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact: The SJVAPCD does not provide numeric thresholds to assess the significance of greenhouse gas emissions. Instead, the SJVAPCD "Guidance for Valley Land Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA" states that projects that achieve a 29% GHG emission reduction compared to Business as Usual (BAU) would be determined to have a less than significant individual and cumulative impact for GHG. "Business as usual" (BAU) conditions are defined based on the year 2005 building energy efficiency, average vehicle emissions, and electricity energy conditions. The BAU conditions assume no improvements in energy efficiency, fuel efficiency, or

renewable energy generation beyond that existing today. The 2005 BAU conditions were estimated using CalEEMod.

Implementation of the proposed Project would result in long-term greenhouse gas emissions associated with area sources, such as natural gas consumption, landscaping, applications of architectural coatings, and consumer products, as well as mobile emissions. The GHG emissions were estimated using CalEEMod (Appendix A).

	C02 (MT/Year)	CH4 (MT/Year)	N20 (MT/Year)	CO2e (MT/Year)
2005 BAU	3,687	3.72	0.364	3,889
Operational Emissions	2,477	3.37	0.110	2,594
% Reduction From BAU				**33%**

Table 3-12: Projected Project Operational GHG Emissions Compared to 2005 BAU; Source: (CalEEMod, V.2020.4.0)

The project's operational GHG is estimated to be 1,295 CO2e MT lower than the 2005 BAU. This is a reduction of 33%, more than the 29% threshold. Therefore, the impact is considered *less than significant.*

b) Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact: The SJVAPCD states that individual and cumulative GHG emissions are considered less than significant if a Project complies with an approved GHG emission reduction plan or GHG mitigation program within the geographic area in which the Project is located. The City of Visalia Climate Action Plan meets the requirements for a Qualified Greenhouse Gas Reduction Strategy. Therefore, the proposed project's GHG emissions would not be considered a significant impact if the proposed Project were consistent with the City's GHG Reduction Strategy. Table 3-13, below, evaluates the proposed project's consistency with the applicable measures, both existing and proposed, in the GHG reduction plan.

Climate Action Plan Measures	Project Consistency with Strategy
2. Increase in Solar Photovoltaic (PV) Installations	**Consistent.** The proposed Project would involve solar panels on the new homes.
7. Urban Forestry: Requirement for all new development to have street trees, require shade over at least 25% of area in city pocket parks.	**Consistent.** The proposed Project plans to provide trees on all local roads and include them in the improvements on existing roads.

10. Bicycle Path Plan	**Consistent.** The proposed Project includes improvements with bike paths and parkways on Roeben St., Tulare Ave., and Shirk Rd.
11. Infill and High-Density Development	**Consistent.** The proposed Project has residential housing consistent with the 2030 General Plan.

Table 3-13. Project Consistency with Climate Action Plan Strategies.

As discussed above, the proposed Project is consistent with the City of Visalia Climate Action Plan. The proposed Project will comply with all Federal, State, and Local rules pertaining to the regulation of greenhouse gas emissions and the Project will implement Best Performance Standards developed by the SJVAPCD. The Project will not conflict with any plan, policy, or regulation developed to reduce GHG emissions. There is *no impact.*

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☑	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☑	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☑	☐
d) Be located on a Site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard or excessive noise to the public or the environment?	☐	☐	☐	☑
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area?	☐	☐	☑	☐
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
g) Expose people or structures, either directly or indirectly, to significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☑

Environmental Setting

The proposed Project Site is located approximately .2 miles West of the nearest school (Central Valley Christian Schools) and approximately 0.95 miles northeast of the nearest public airport (Visalia Municipal Airport). The terminal of the Airport is approximately 1.37 miles away; however, the nearest runway is 0.95 miles from the Project Site (Figure 3-4).

The Department of Toxic Substances Control's (DTSC's) Envirostor was used to identify any sites known to be associated with releases of hazardous materials or wastes within the Project area. This research confirmed that the Project would not be located on or nearby a Site that is included on a list of hazardous materials sites compiled under Government Code Section 65962.5.

Regulatory Setting

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S. Code [U.S.C.] §9601 et seq.).
The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or the Superfund Act) authorizes the President to respond to releases or threatened releases of hazardous substances into the environment.

Occupational Safety and Health Administration
The Occupational Safety and Health Administration (OSHA) sets and enforces Occupational Safety and Health Standards to ensure safe working conditions. OSHA provides training, outreach, education, and compliance assistance to promote safe workplaces. The proposed Project would be subject to OSHA requirements during construction, operation, and maintenance.

Toxic Substances Control Act of 1976 (15 U.S.C. §2601 et seq.).
The Toxic Substance Control Act was enacted by Congress in 1976 and authorizes the EPA to regulate any chemical substances determined to cause an unreasonable risk to public health or the environment.

Hazardous Waste Control Law, Title 26.
The Hazardous Waste Control Law creates hazardous waste management program requirements. The law is implemented by regulations contained in Title 26 of the California Code of Regulations (CCR), which contains requirements for the following aspects of hazardous waste management:

- Identification and classification;
- Generation and transportation;
- Design and permitting of recycling, treatment, storage, and disposal facilities;
- Treatment standards;
- Operation of facilities and staff training; and
- Closure of facilities and liability requirements.

California Code of Regulations, Title 22, Chapter 11.
Title 22 of the California Code of Regulations contains regulations for the identification and classification of hazardous wastes. The CCR defines waste as hazardous if it has any of the following characteristics: ignitability, corrosivity, reactivity, and/or toxicity.

California Emergency Services Act

The California Emergency Services Act created a multi-agency emergency response plan for the state of California. The Act coordinates various agencies, including CalEPA, Caltrans, the California Highway Patrol, regional water quality control boards, air quality management districts, and county disaster response offices.

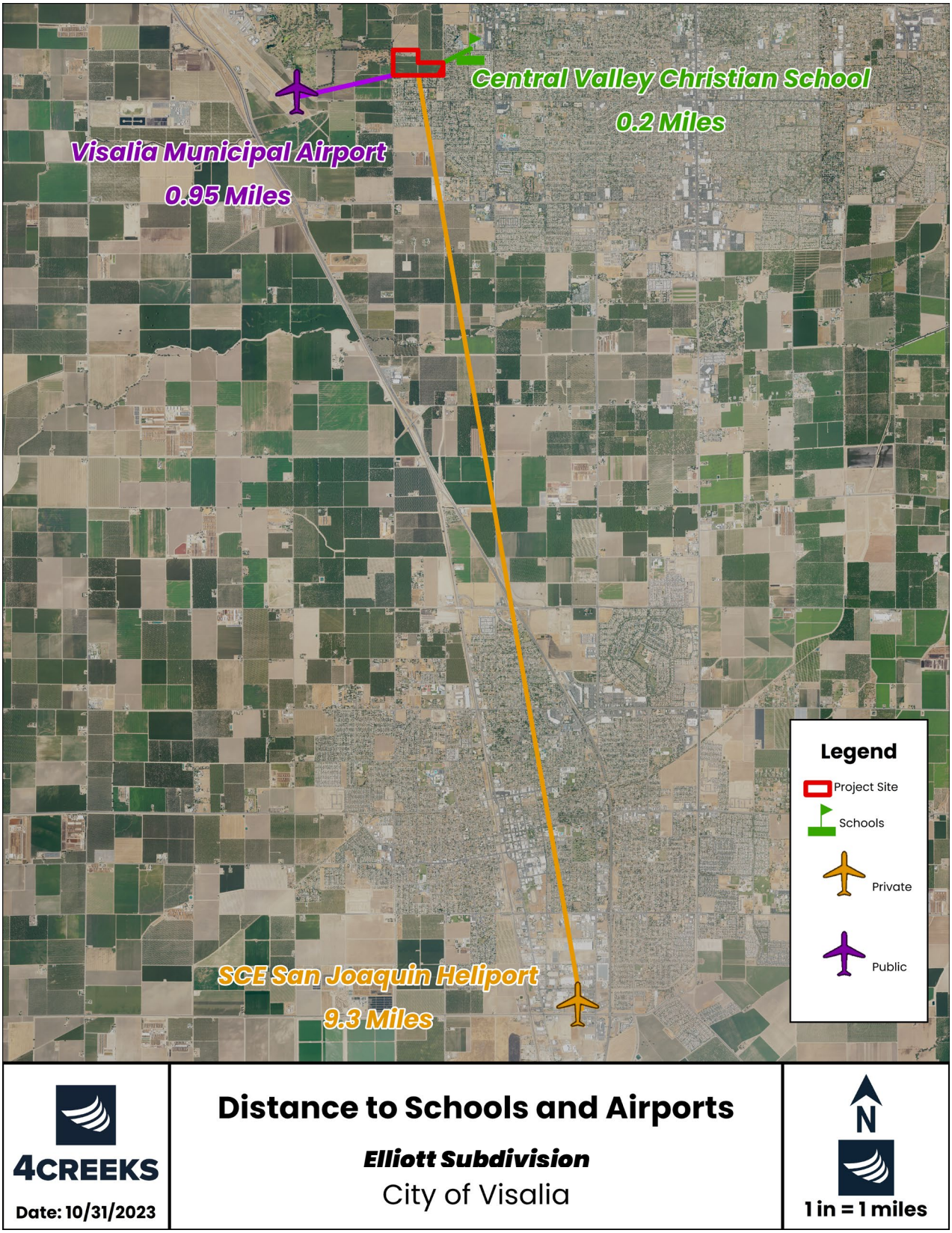


Figure 3-5: Distance to Schools and Airports

Discussion

a) Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant Impact: Project construction activities may involve the use, storage, and transport of hazardous materials. During construction, the contractor will use fuel trucks to refuel onsite equipment and may use paints and solvents to a limited degree. The storage, transport, and use of these materials will comply with Local, State, and Federal regulatory requirements. There is the potential for small leaks due to refueling of construction equipment, however standard construction Best Management Practices (BMPs) included in the SWPPP will reduce the potential for the release of construction related fuels and other hazardous materials by controlling runoff from the Site and requiring proper disposal or recycling of hazardous materials. The impact is *less than significant.*

b) Would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than Significant Impact: There is no reasonably foreseeable condition or incident involving the Project that could result in release of hazardous materials into the environment, other than any potential accidental releases of standard fuels, solvents, or chemicals encountered during typical construction of a residential subdivision. Should an accidental hazardous release occur or should the Project encounter hazardous soils, existing regulations for handling hazardous materials require coordination with the California Department of Toxic Substances Control for an appropriate plan of action, which can include studies or testing to determine the nature and extent of contamination, as well as handling and proper disposal. Therefore, potential impacts are *less than significant*.

c) Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less than Significant Impact: The Project is located approximately .2 miles from an existing school. During construction, the contractor will use fuel trucks to refuel onsite equipment and may use paints and solvents to a limited degree. The storage, transport, and use of these materials will comply with Local, State, and Federal regulatory requirements. There is the potential for small leaks due to refueling of construction equipment, however standard construction Best Management Practices (BMPs) included in the SWPPP will reduce the potential for the release of construction related fuels and other hazardous materials by controlling runoff from the Site and requiring proper disposal or recycling of hazardous materials. The operational aspect of the Project does not involve the use or storage of

hazardous substances other than insignificant amounts of pesticides, fertilizers, and cleaning agents required for normal maintenance of structures and landscaping. The Project would not emit hazardous emissions or involve the handling of acutely hazardous materials or waste. Therefore, there would be *a less than significant impact.*

d) Would the Project be located on a Site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact: The Project Site is not listed as a hazardous materials Site pursuant to Government Code Section 65962.5 and is not included on a list compiled by the Department of Toxic Substances Control. There would be *no impact.*

e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area?

Less Than Significant Impact: The proposed Project is located approximately .95 miles northeast of the nearest public airport (Visalia Municipal Airport). However, according to the Airport Master plan, the Project Site would not be impacted by the airport. Noise contours developed for 2019 show that the airport would produce less than 65 dB on the Project Site. All land uses located outside of the 65 dB contours are considered to have a less than significant noise impact from the airport. Implementation of the proposed Project would not result in a safety hazard for people residing or working in the Project area. There is *a less than significant impact.*

f) Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact: The City's design and environmental review procedures shall ensure compliance with emergency response and evacuation plans. In addition, the Site plan will be reviewed by the Fire Department per standard City procedure to ensure consistency with emergency response and evacuation needs. Therefore, the proposed Project would have *no impact* on emergency evacuation.

g) Would the Project expose people or structures, either directly or indirectly, to significant risk of loss, injury or death involving wildland fires?

No Impact: The land surrounding the Project Site is developed with urban uses and farmlands which are not considered to be wildlands. Additionally, the City of Visalia General Plan finds that fire hazards within the Planning Area, including the proposed Project site, have low frequency, limited extent, limited magnitude, and low significance. The proposed

Project would not expose people or structures to significant risk of loss, injury or death involving wildland fires and there is *no impact.*

X. HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise sustainably degrade surface or ground water quality?	☐	☑	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?	☐	☐	☑	☐
c) Substantially alter the existing drainage pattern of the Site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner, which would:				
(i) result in substantial erosion or siltation on- or off-site?	☐	☑	☐	☐
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?	☐	☑	☐	☐
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☑	☐	☐
(iv) impede or redirect flood flows?	☐	☑	☐	☐
d) In flood hazard, tsunami, or seiche zones risk the release of pollutants due to Project inundation?	☐	☐	☐	☑
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater movement plan?	☐	☐	☐	☑

Environmental Setting

Surface Water

Visalia is in the center of the Kaweah River Delta System, resulting in many rivers and creeks flowing through the city. The St. Johns River is the City's primary surface water feature. Other significant surface water features include Modoc Ditch, Mill Creek Ditch, Mill Creek, Tulare Irrigation District (TID) Canal, Packwood Creek, Cameron Creek, Deep Creek, Evans Creek,

Persian Ditch, and several other local ditches. These receive a significant amount of water during the rainy season and help drain stormwater.

Groundwater

Groundwater in Tulare County is present in valley deposits of alluvium that are several thousand feet thick and occurs in both confined and unconfined conditions. The creeks in Visalia are tied to the groundwater system. The creeks lose water in the winter while they feed the groundwater, and gain water in the summer when the groundwater feeds the creeks. The depth to groundwater varies significantly throughout the valley floor area of Tulare County. In the area around Visalia, depth to groundwater varies from about 120 feet below ground surface along the western portion of the city to approximately 100 feet below ground surface to the east, as measured in spring 2010. Groundwater levels measured in the city have declined since the 1940s, from approximately 30 feet below ground surface in 1940 to 120 feet below ground surface in 2010. The water quality of the groundwater that underlies the Planning Area is excellent for domestic and agricultural uses. This is mostly due to the abundant snowmelt that originates in the Sierra Nevada. Groundwater is the primary source of drinking water for the planning area residents.

Stormwater Drainage

The City, in conjunction with Kaweah Delta Water Conservation District and Tulare Irrigation District, operates and maintains a vast municipal storm drainage system that consists of drainage channels, 23 detention and retention basins, 33 pump stations and 250 miles of pipe. Stormwater from the Project Site will be collected and conveyed to an on-site stormwater basin.

Regulatory Setting

Clean Water Act

The Clean Water Act (CWA) is enforced by the U.S. EPA and was developed in 1972 to regulate discharges of pollutants into the waters of the United States. The Act made it unlawful to discharge any pollutant from a point source into navigable waters unless a National Pollution Discharge Elimination System (NPDES) Permit is obtained.

National Flood Insurance Act

The Federal Emergency Management Agency (FEMA) is tasked with responding to, planning for, recovering from, and mitigating against disasters. The Federal Insurance and Mitigation Administration within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and administering programs that aid with mitigating future damages from natural hazards.

California Water Quality Porter-Cologne Act

California's primary statute leading water quality and water pollution concerns with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970

(Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resource Control Board (SWRCB) and each of the nine Regional Water Quality Boards (RWQCB) power to protect water quality and further develop the Clean Water Act within California. The applicable RWQCB for the proposed Project is the Central Valley RWQCB.

Central Valley RWQCB

The proposed Project Site is within the jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB). The Central Valley RWQCB requires a National Pollution Discharge Elimination System (NPDES) Permit and Stormwater Pollution Prevention Plan (SWPPP) for projects disturbing more than one acre of total land area. Because the Project is greater than one acre, a NPDES Permit and SWPPP will be required.

City of Visalia General Plan

The 2030 General Plan includes the policies related to hydrology and water quality that correlate to the proposed project:

- *PSCU-P-59*: Require new developments to incorporate floodwater detention basins into Project designs where consistent with the Stormwater Master Plan and the Groundwater Recharge Plan.
- *PSCU-P-60*: Control urban and stormwater runoff and point and non-point discharge of pollutants. As part of the City's Stormwater Management Program, adopt and implement a Stormwater Management Ordinance to minimize stormwater runoff rates and volumes, control water pollution, and maximize groundwater recharge. New development will be required to include Low Impact Development features that reduce impermeable surface areas and increase infiltration. Such features may include, but are not limited to:
    - Canopy trees or shrubs to absorb rainwater;
    - Grading that lengthens flow paths over permeable surfaces and increases runoff travel time to reduce the peak hour flow rate;
    - Partially removing curbs and gutters from parking areas where appropriate to allow stormwater sheet flow into vegetated areas;
    - Use of permeable paving in parking lots and other areas characterized by significant impervious surfaces;
    - On-Site stormwater detention, use of bioswales and bioretention basins to facilitate infiltration; and
    - Integrated or subsurface water retention facilities to capture rainwater for use in landscape irrigation and other non-potable uses.
- *PSCU-P-46*: Adopt and implement a Water Efficient Landscaping Ordinance for new and/or refurbished development that exceeds mandated sizes, and ensure that all new City parks, streetscapes, and landscaped areas conform to the Ordinance's requirements. The Ordinance should include provisions to optimize outdoor water use by:
    - Promoting appropriate use of plants and landscaping;

- Establishing limitations on use of turf including size of turf areas and use of cool-season turf such as Fescue grasses, with exceptions for specified uses (e.g., recreation playing fields, golf courses, and parks);
- Establishing water budgets and penalties for exceeding them;
- Requiring automatic irrigation systems and schedules, including controllers that incorporate weather-based or other self-adjusting technology;
- Promoting the use of recycled water; and
- Minimizing overspray and runoff.

Discussion

a) Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less than Significant with Mitigation: The Project will result in less than significant impacts to water quality due to potentially polluted runoff generated during construction activities. Construction may include excavation, grading, and other earthwork across most of the 59.13-acre Project site. During storm events, exposed construction areas across the Project Site may cause runoff to carry pollutants, such a chemicals, oils, sediment, and debris. Implementation of a Stormwater Pollution Prevention Plan (SWPPP) will be required for the project. A SWPPP identifies all potential sources of pollution that could affect stormwater discharges from the Project Site and identifies best management practices (BMPs) related to stormwater runoff. As such, implementation of Mitigation Measures HYD- 1 and HYD-2 will ensure impacts remain *less than significant with mitigation.*

b) **Would the Project substantially decrease groundwater supplies or interfere with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?**

Less than Significant Impact: Water services will be provided by Cal Water, Visalia District, upon development. The District currently produces about 27 million gallons of local groundwater per day from 75 active wells and delivers it to customers through more than 519 miles of pipeline. The District delivers water to residential, commercial, industrial, and governmental customers. Residential customers account for most of the District's service connections and 69 percent of its water uses. Non-residential water uses account for 28 percent of total demand, while distribution system losses account for 3 percent. The system produced 30,152 acre-feet (AF) of groundwater in 2020. The available water supply is expected to supply the projected population based on the General Plan land uses. The system has a capacity to pump 100,829 acre-feet per year (AFY), all from groundwater. The projected demand is expected to 35,276 AF in 2030, 38,310 AF in 2035, and 41,258 AF in 2040.

Using average per-person water use in Visalia (183 gallons; 2020 Urban Water Management Plan) and the average household size in Visalia (2.99 persons; US Census

Bureau), water demand for the proposed 225-unit residential development is estimated to be approximately 122,566 gallons of water daily, or about 137-acre feet per year. With an expected increase of 5,124 AF from 2020 to 2030, there will be enough water supply for the proposed project. The most water-intensive aspect of the Project (Low-Density Residential homes) is consistent with the City's General Plan land use designation. As such, the Project would not affect groundwater supplies beyond what has already been analyzed in the most current General Plan EIR or Urban Water Management Plan.

The Project would result in nearly full development of the site, which would convert approximately 59.13 acres from pervious surfaces to impervious surfaces. However, this would not significantly interfere with groundwater recharge because all stormwaters would be collected and diverted to a new stormwater basin located on the southwest area of the Site for groundwater recharge. Because the addition of impervious surfaces would not interfere substantially with groundwater recharge and the Project would not utilize groundwater resources beyond what has been previously analyzed in the Visalia Planning Area General Plan EIR or the Urban Water Management Plan, the impact would be *less than significant.*

c) Would the Project substantially alter the existing drainage pattern of the Site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner, which would:

i. Result in substantial erosion or siltation on- or off-site?

Less than Significant with Mitigation: The proposed Project would result in the addition of impervious surfaces and alter existing drainage patterns on the 59.13-acre Project Site which would have the potential to result in erosion or siltation on- or off-site. The disturbance of soils during construction could cause erosion, resulting in temporary construction impacts. However, this impact would be appropriately mitigated through implementation of a Stormwater Pollution Prevention Plan (SWPPP) which include mandated erosion control measures, which are developed to prevent significant impacts related to erosion caused by runoff during construction (Mitigation Measure HYD-1). The Project proponent will also be required to prepare drainage plans (Mitigation Measure HYD-2) and a Development Maintenance Manual (Mitigation Measure HYD-3) to ensure that existing drainage patterns are maintained during Project operations and that the Project would not result in substantial erosion or siltation on- or off-site. The impact is *less than significant with implementation of these mitigation measures.*

ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?

Less than Significant with Mitigation: The Project would result in the addition of impervious surfaces on the 59.13-acre Project Site which would have the potential to increase surface

runoff resulting in flooding on- or off-site. This impact would be appropriately mitigated through implementation of Mitigation Measure HYD-2, which requires the Project to submit drainage plans to the City Engineer prior to the issuance of grading permits. The drainage plans will include BMPs to ensure runoff from the Project will not result in flooding on- or off-site. Therefore, impacts are *less than significant with mitigation.*

iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than Significant with Mitigation: The proposed Project would result in the addition of impervious surfaces and alter existing drainage patterns on the 59.13-acre Project Site which would have the potential to impact existing stormwater drainage systems or provide additional sources of polluted runoff. The Project would contain a storm drainage basin to collect all runoff from the site. The disturbance of soils during construction could cause erosion, resulting in temporary construction impacts. However, this impact would be appropriately mitigated through implementation of a Stormwater Pollution Prevention Plan (SWPPP) which include mandated erosion control measures, which are developed to prevent significant impacts related to erosion caused by runoff during construction (Mitigation Measure HYD-1). During Project operations, the proposed impervious surfaces, including roads, building pads, and parking areas, would collect automobile derived pollutants such as oils, greases, rubber, and heavy metals. This could contribute to point source and non-point source pollution if these pollutants were transported into waterways during storm events. The Project proponent will be required to prepare drainage plans (Mitigation Measure HYD-2) and a Development Maintenance Manual (Mitigation Measure HYD-3) to ensure that the Project would not overwhelm the planned stormwater drainage basin or result in discharges of polluted runoff into local waterways. The impact is *less than significant with implementation of these mitigation measures.*

iv. Impede or redirect flood flows?

Less than Significant with Mitigation: The Project Site is generally flat and no significant grading or leveling will be required. The proposed Project Site is not in proximity to a stream or river and will not alter the course of a stream or river. According to National Flood Hazard mapping by the Federal Emergency Management Agency, the proposed Project is within the "AE" and "X" flood zones. Approximately 15.25 acres, or 62 of the residential units, of the Site are within the AE flood zone. The AE flood zone has a 1% chance of flooding every year. The remainder of the site is within the X flood zone, which has a 0.2% chance of flooding every year.

Following regulations set by the American Society of Civil Engineers, all homes within the AE flood zone will be built following these regulations:

1. The elevation of the lowest floor in a structure must be at or above the zone's base flood elevation (BFE).
2. Enclosed areas below the BFE or lowest floor cannot be used as living spaces.
3. All electrical, plumbing and HVAC equipment must be elevated to or above the area's BFE.

The Project would result in the addition of impervious surfaces on the 59.13-acre Site which could affect drainage and flood patterns. This impact would be appropriately mitigated through implementation of Mitigation Measure HYD-2, which requires the Project to submit drainage plans to the City Engineer prior to the issuance of grading permits. The drainage plans will include BMPs to ensure the Project will not impede or redirect flood flows. Therefore, impacts are *less than significant with mitigation.*

d) Would the project, in flood hazard, tsunami, or seiche zones, risk the release of pollutants due to Project inundation?

No Impact: The proposed Project is located inland and not near an ocean or large body of water, therefore, would not be affected by a tsunami. The proposed Project is in a relatively flat area and would not be impacted by inundation related to mudflow. Since the Project is in an area that is not susceptible to inundation, the Project would not risk the release of pollutants due to Project inundation. As such, there is *no impact.*

e) Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact: The Project would not conflict with or obstruct the implementation of a water quality control plan or sustainable groundwater management plan. The proposed Project is consistent with the Central Valley RWQCB. The Project will comply with all applicable rules and regulations regarding water quality and groundwater management and there is *no impact.*

Mitigation Measures for Hydrology and Water Quality

Mitigation Measure HYD-1: Prior to the issuance of any construction/grading permit and/or the commencement of any clearing, grading, or excavation, the Applicant shall submit a Notice of Intent (NOI) for discharge from the Project Site to the California SWRCB Storm Water Permit Unit.

• Prior to issuance of grading permits for Phase 1 the Applicant shall submit a copy of the NOI to the City.

• The City shall review noticing documentation prior to approval of the grading permit. City monitoring staff will inspect the Site during construction for compliance.

Mitigation Measure HYD-2: The Applicant shall require the building contractor to prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) to the City 45 days prior to the start of work for approval. The contractor is responsible for understanding the State General Permit and instituting the SWPPP during construction. A SWPPP for Site construction shall be developed prior to the initiation of grading and implemented for all construction activity on the Project Site in excess of one (1) acre, or where the area of disturbance is less than one acre but is part of the Project's plan of development that in total disturbs one or more acres. The SWPPP shall identify potential pollutant sources that may affect the quality of discharges to storm water and shall include specific BMPs to control the discharge of material from the site. The following BMP methods shall include, but would not be limited to:

- Dust control measures will be implemented to ensure success of all onsite activities to control fugitive dust;
- A routine monitoring plan will be implemented to ensure success of all onsite erosion and sedimentation control measures;
- Provisional detention basins, straw bales, erosion control blankets, mulching, silt fencing, sand bagging, and soil stabilizers will be used;
- Soil stockpiles and graded slopes will be covered after two weeks of inactivity and 24 hours prior to and during extreme weather conditions; and,
- BMPs will be strictly followed to prevent spills and discharges of pollutants onsite, such as material storage, trash disposal, construction entrances, etc.

Mitigation Measure HYD-3: A Development Maintenance Manual for the Project shall include comprehensive procedures for maintenance and operations of any stormwater facilities to ensure long-term operation and maintenance of post-construction stormwater controls. The maintenance manual shall require that stormwater BMP devices be inspected, cleaned, and maintained in accordance with the manufacturer's maintenance conditions. The manual shall require that devices be cleaned prior to the onset of the rainy season (i.e., mid-October) and immediately after the end of the rainy season (i.e., mid-May). The manual shall also require that all devices be checked after major storm events. The Development Maintenance Manual shall include the following:

- Runoff shall be directed away from trash and loading dock areas;
- Bins shall be lined or otherwise constructed to reduce leaking of liquid wastes;
- Trash and loading dock areas shall be screened or walled to minimize offsite transport of trash; and,
- Impervious berms, trench catch basin, drop inlets, or overflow containment structures nearby docks and trash areas shall be installed to minimize the potential for leaks, spills, or wash down water to enter the drainage system.

XI. LAND USE AND PLANNING

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☑
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑

Environmental Setting

The proposed Project Site is in the Visalia Planning Area, just outside of the city limits. The Site is approximately 3.5 miles southwest of the Visalia downtown. The Site is currently zoned as AE-20 by the County of Tulare but is prezoned for R-1-5 zoning by the City of Visalia after annexation (Figure 3-6). The Site is designated as Low Density Residential by the Visalia General Plan (Figure 3-5). It is located within the Tier 2 UDB. The Project does not need rezoning or General Plan Amendments.

The Site currently contains agriculture uses. The Site is topographically flat and is bounded by agricultural uses to the north and west, and single-family residential to the south and east. The agricultural land to the north and west is designated as Low Density Residential, Medium Density Residential, Neighborhood Commercial, and Parks/Recreation by the Visalia General Plan.

Regulatory Setting

Visalia General Plan

The proposed Project Site is designated as Low Density Residential.

- The Low-Density Residential designation provides single family detached housing. Residential densities are typical of single-family subdivisions. The typical residential density for this designation ranges from two to 10 housing units per gross acre. Buildout is assumed at four units per gross acre.

The 2030 General Plan includes the policies related to land use that correlate to the proposed project:

- *LU-P-19*: Ensure that growth occurs in a compact and concentric fashion by implementing the General Plan's phased growth strategy.

- *LU-P-21*: Allow annexation and development of residential, commercial, and industrial land to occur within the Tier II UDB and the Tier III Urban Growth Boundary consistent with the City's Land Use Diagram, according to the following phasing thresholds:
    - Tier II: The expansion criteria for land in Tier II to become available for annexation and development is that such annexation and development shall only occur if it does not result in excess of a 10-year supply of undeveloped residential land within the new Tier I. This is intended to be consistent with LAFCO policies discouraging residential annexations exceeding a 10-year housing inventory. Thus, the "inner" tier is distinguished from the GPURC-recommended Tier I in that it is not based on projected capacity and need, but rather on a requirement to be able to demonstrate that less than a ten year inventory of residential land exists.
- *LU-P-25*: Provide planning and technical support for the relocation of agricultural operations currently located in the city to compatible locations in the Planning Area or the County.
- *LU-P-28*: Continue to use natural and man-made edges, such as major roadways and waterways within the city's Urban Area Boundary, as urban development limit and growth phasing lines.
- LU-P-47: Establish criteria and standards for pedestrian, bicycle, and vehicle circulation networks within new subdivisions and non-residential development.
- *LU-P-71*: Ensure that noise, traffic, and other potential conflicts that may arise in a mix of commercial and residential uses are mitigated through good site planning, building design, and/or appropriate operational measures.

City of Visalia Zoning Ordinance

The proposed Project Site is prezoned for R-1-5 zoning. The Project will comply with the R-1-5 zoning. The R-1-5 zone has a minimum site area of 5,000 square feet, with a minimum width of 50 feet. The Project has 225 lots with a minimum of 6,480 square feet per lot.

R-1 zoning is intended to provide living area within the city where development is limited to low density concentrations of one-family dwellings where regulations are designed to accomplish the following:

- to promote and encourage a suitable environment for family life;
- to provide space for community facilities needed to compliment urban residential areas and for institutions that require a residential environment;
- to minimize traffic congestion and to avoid an overload of utilities designed to service only low-density residential use.

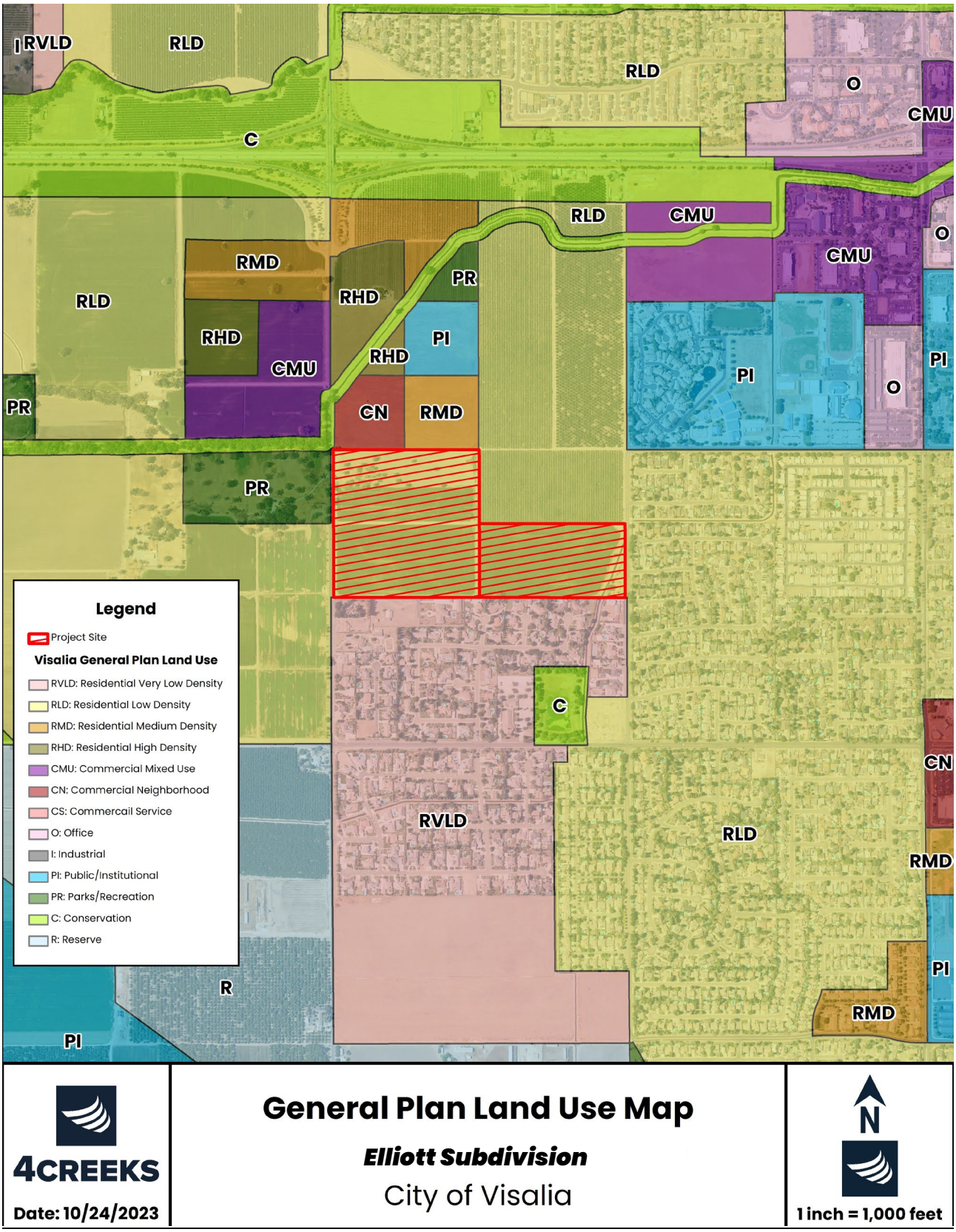


Figure 3-6: General Plan Land Use Designation

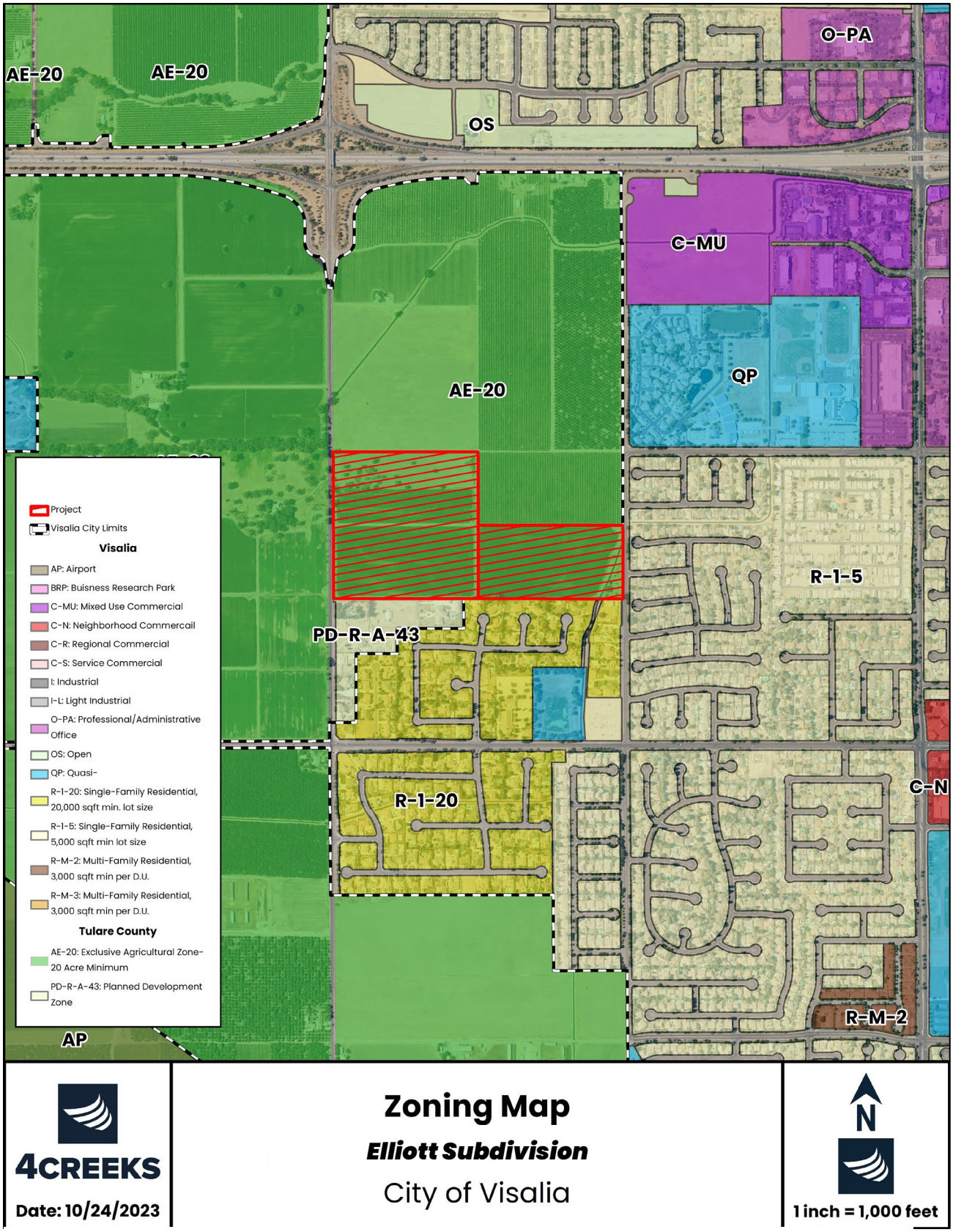


Figure 3-7: Zoning Map

Discussion

a) Would the Project physically divide an established community?

No Impact: The proposed Project will not physically divide an established community. The proposed Project Site is designated for Low Density Residential by the Visalia General Plan and the Project is consistent with this land use designation. The Project would continue to operate as the same designation following Project implementation. There is *no impact.*

b) Would the Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact: The Project Site is located on land designated for residential use. The proposed Project does not conflict with this land use, or any other policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect. There is *no impact.*

XII. MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☑
b) Result in the loss of availability of a locally - important mineral resource recovery Site delineated on a local general plan, specific plan, or other lands use plan?	☐	☐	☐	☑

Environmental Setting

Tulare County contains mineral resources of sand, gravel, and crushed stone, found in alluvial deposits and hard rock quarries. Most of this mining takes place along rivers and at the base of the Sierra foothills. However, the Visalia Planning Area currently contains three former sand and gravel mines, but no currently operating mines and no designated Mineral Resource Zones.

Regulatory Setting

California State Surface Mining and Reclamation Act

The California State Surface Mining and Reclamation Act was adopted in 1975 to regulate surface mining to prevent adverse environmental impacts and to preserve the state's mineral resources. The Act is enforced by the California Department of Conservation's Division of Mine Reclamation.

Discussion

a) Would the Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact: The Project Site has no known mineral resources that would be of a value to the region and the residents of the state, therefore the proposed Project would not result in the loss of impede the mining of regionally or locally important mineral resources. There is *no impact.*

b) Would the Project result in the loss of availability of a locally - important mineral resource recovery Site delineated on a local general plan, specific plan, or other lands use plan?

No Impact: There are no known mineral resources of importance to the region and the Project Site is not designated under the City's or County's General Plan as an important mineral resource recovery site. For that reason, the proposed Project would not result in the loss of availability of known regionally or locally important mineral resources. There is *no impact.*

XIII. NOISE

Would the Project result in:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Generation of a substantial temporary or permeant increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☑	☐
b) Generation of excessive ground-borne vibration or groundborne noise levels?	☐	☐	☑	☐
c) For a Project located within the vicinity of a private airstrip or, an airport land use plan or, where such a plan has not been adopted, within two miles of public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☑	☐

Environmental Setting

Noise is often described as unwanted sound. Sound is the variation in air pressure that the human ear can detect. If the pressure variations occur at least 20 times per second, they can be detected by the human ear. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called Hertz (Hz).

Ambient noise is the "background" noise of an environment. Ambient noise levels on the proposed Project Site are primarily due to agricultural activities and traffic. Construction activities usually result in an increase in sound above ambient noise levels.

Vibration is seismic waves that radiate along the surface of the earth and downward into the earth. The operation of heavy construction equipment, particularly pile driving and other impacts devices such as pavement breakers create this vibration.

Sensitive Receptors

Noise level allowances for various types of land uses reflect the varying noise sensitivities associated with those uses. Residences, hotels/motels, hospitals, schools, and libraries are some of the most sensitive land uses to noise intrusion and therefore have more stringent noise level allowances than most commercial or agricultural uses that are not subject to impacts

such as sleep disturbance. The nearest sensitive receptors are the homes to the south and east of the Site.

Regulatory Setting

City of Visalia Noise Ordinance

The City of Visalia Noise Ordinance provides noise level standards for land use compatibility. Exterior and interior noise levels may not exceed any of the categorical noise level standards shown in Table 3-14. The standards are shown in A-weighted decibels (dBA). For Single Family Residential, the exterior noise during the daytime is to be below 70 dBA, and the indoor noise during the daytime is to be below 55 dBA.

Category	*Cumulative number of minutes in any one hour time period*	*Evening and daytime (6:00 a.m. to 7:00 p.m.)*	*Nighttime (7:00 p.m. to 6:00 a.m.)*
Exterior Levels			
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65
Interior Levels			
1	5	45	35
2	1	50	40
3	0	55	45

Table 3-14: City of Visalia Noise Standards. Source: City of Visalia Noise Ordinance

City of Visalia General Plan

The current noise element of the City's General Plan establishes goals and policies intended to limit community exposure to excessive noise levels. Visalia's current General Plan identifies noise sources such as roadways, rails, and airports within the city and includes land use compatibility guidelines.

- *N-P-3*: Establish performance standards for noise reduction for new housing that may be exposed to community noise levels above 65 dB DNL/CNEL, as shown on the Noise Contour Maps, based on the target acceptable noise levels for outdoor activity levels and interior spaces in Tables 8-2 and 8-3. Noise mitigation measures that may be considered to achieve these noise level targets include but are not limited to the following:
    - Construct façades with substantial weight and insulation;
    - Use sound-rated windows for primary sleeping and activity areas;
    - Use sound-rated doors for all exterior entries at primary sleeping and activity areas;

- Use minimum setbacks and exterior barriers;
- Use acoustic baffling of vents for chimneys, attics, and gable ends;
- Install a mechanical ventilation system that provides fresh air under closed window conditions.

Discussion

a) Would the Project result in generation of a substantial temporary or permeant increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than Significant Impact: Project construction is anticipated to last approximately 66 months and will involve temporary noise sources in the vicinity of the project. The average noise levels generated by construction equipment that will likely be used in the proposed Project are provided in Table 3-15.

The nearest residence and sensitive receptor are the single-family homes to the south and east. The City requires that mitigation measures be implemented if noise levels exceed 70 dB in sensitive outdoor areas or if interior noise levels exceed 55 dB. As shown in Figure 3-7, it was found that a residence must be at least 250 feet from construction in the exterior and 100 feet from construction in the interior to avoid noise levels exceeding these thresholds.

With the Project bordering another residential community, a noise disturbance is unavoidable. However, the construction would comply with Visalia Municipal Code Chapter 8.36 to ensure that the construction noise impacts would be less than significant. Measures such as maintaining minimum setback distances between construction equipment and receptors, only having construction during weekday daytime hours, and noise barriers would be implemented to avoid significant construction noise impacts.

Long term noise levels resulting from the Project would be produced by single family residential homes, which are not normally associated with high operational noise levels. Because noise generated during Project construction would be intermittent, short term, and would not exceed the thresholds established by the Visalia Noise Ordinance for sensitive receptors and the Project does not propose uses that would typically generate high noise levels, the impact is *less than significant*.

Type of Equipment	Exterior Lmax at 50 feet (dBA)
Tractors	84
Loaders	80
Backhoes	80
Excavators	85
Generator Sets	82
Air Compressors	80
Rubber Tired Dozers	85
Forklifts	75
Welders	73
Graders	85
Scrapers	85
Cranes	85
Paving Equipment	85
Rollers	85

Table 3-15. Noise levels of noise-generating construction equipment at various distances. Source: FHA Construction Noise Handbook (dBA at 50 feet). Noise levels beyond 50 feet were estimated using the inverse square law based on given values for dBA at 50 feet

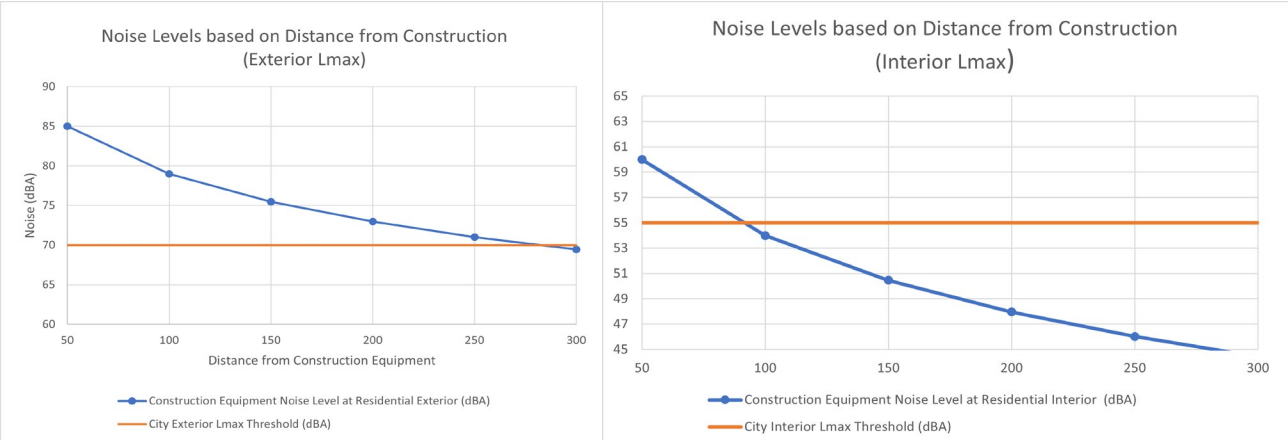


Figure 3-8: Construction Related Noise Levels Based on Distance from Construction Equipment. Interior Noise=Assume 25 dB Exterior to Interior Noise Reduction

b) Would the Project result in generation of excessive ground-borne vibration or groundborne noise levels?

Less than Significant Impact: Although Project operations would not include uses or activities that typically generate excessive groundborne vibration or groundborne noise levels, Project construction could introduce temporary groundborne vibration to the Project Site and the surrounding area. Sources that may produce perceptible vibrations are provided in Table 3-16.

Equipment	Peak Particle Velocity (inches/second) at 25 feet	Approximate Vibration Level (LV) at 25 feet
Pile driver (impact)	1.518 (upper range)/0.644 (typical)	112/104
Pile driver (sonic)	0.734 (upper range)/0.170 (typical)	105/93
Clam shovel drop (slurry wall)	0.202	94
Hydromill (slurry wall)	0.008 in soil/0.017 in rock	66/75
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

Table 3-16. Vibration Levels Generated by Construction Equipment. Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, September 2018.

The primary source of vibration during Project construction would likely be from a bulldozer (tractor), which would generate 0.089 inch per second PPV at 25 feet with an approximate vibration level of 87 VdB. Vibration from the bulldozer would be intermittent and not a source of continual vibration. There are no adopted City standards or thresholds of significance for vibration. The evaluation of potential impacts related to construction vibration levels is based on the published data in the 2018 FTA Guidelines. At 25 feet, the buildings most susceptible to vibration could be impacted at .12 inch/second. Because vibrations generated by Project construction would not exceed 0.12 inch/second, the impact is *less than significant.*

c) For a Project located within the vicinity of a private airstrip or, an airport land use plan or, where such a plan has not been adopted, within two miles of public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?

Less than Significant Impact: The proposed Project is located approximately .95 miles northeast of the nearest public airport (Visalia Municipal Airport). However, according to the Airport Master plan, the Project Site would not be impacted by the airport. Noise contours developed for 2019 show that the airport would produce less than 65 dB. All land uses located outside of the 65 dB contours are considered less than significant. Implementation of the proposed Project would not result in a safety hazard for people residing or working in the Project area. There is a *less than significant impact.*

XIV. POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☑
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

Environmental Setting

The United States Census Bureau estimated the population in the City of Visalia to be 143,966 as of July 2022. This is an increase from the 2010 Census, which counted the population in the City of Visalia to be 124,442. Factors that influence population growth in Visalia include job availability, housing availability, and the capacity of proposed and existing infrastructure.

Regulatory Setting

The City of Visalia population size is controlled by the development code and Housing Element of the General Plan. These documents regulate the number of dwelling units per acre allowed on various land uses and establish minimum and maximum lot sizes, which has a direct impact on the City's population size.

City of Visalia 2030 General Plan Housing Element

The 2030 General Plan includes the policies related to population and housing that correlate to the proposed project:

- *LU-P-50*: Provide development standards to ensure residential development is not negatively affected by adjacent non-residential land uses.
- *LU-P-71*: Ensure that noise, traffic, and other potential conflicts that may arise in a mix of commercial and residential uses are mitigated through good Site planning, building design, and/or appropriate operational measures.

Discussion

a) Would the Project induce substantial unplanned population growth in an area, either directly (for example, by new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact: The United States Census Bureau stated the population in the City of Visalia to be 143,966 as of July 2022. The Project proposes to construct 225 new single family residential units. The US Census Bureau states that the Visalia's average household size is 3.05 persons. Based on this average household size, the anticipated population increase because of the proposed Project is 683 persons. The construction of housing at this location would not be unplanned, as the Visalia General Plan designated the proposed Project Site for Low Density Residential. Additionally, the City is planning for more businesses, services, and infrastructure to accommodate the new population. Overall, the Project will not constitute an unplanned increase in growth and population. There is *no impact.*

b) Would the Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact: There Project would not displace any existing housing. Overall, this will increase the amount of available housing in the community. There is *No Impact*.

XV. PUBLIC SERVICES

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable serve ratios, response times of other performance objectives for any of the public services:				
a. Fire protection?	☐	☐	☑	☐
b. Police protection?	☐	☐	☑	☐
c. Schools?	☐	☐	☑	☐
d. Parks?	☐	☐	☑	☐
e. Other public facilities?	☐	☐	☑	☐

Environmental Setting

Fire

Visalia and Project Site is served by The Visalia Fire Department (VFD), which operates 5 fire stations within the City of Visalia. The VFD will continue to provide fire protection services to the proposed Project Site following Project implementation. VFD Fire Station #53 is the nearest fire station to the site, approximately .7 miles to the southeast.

Police

Law enforcement services are provided to the Project Site via The Visalia Police Department (VPD). The VPD will continue to provide police protection services to the proposed Project Site following Project implementation. The VPD headquarters are located approximately 3.4 miles northeast of the proposed Project site. VPD Substation District 2 is located approximately 2.6 miles southeast of the Project Site.

Schools

The proposed Project Site is located within the Visalia Unified School District (VUSD) from Kindergarten through 12th Grade. The District includes 25 elementary schools, four middle schools, four traditional high schools, and alternative education programs. The nearest schools are located approximately .2 miles northeast (Central Valley Christian Schools) and .65 miles southeast (El Diamonte High School).

Regulatory Setting

California Fire Code

The California Fire Code (Title 24, Part 9 of the California Code of Regulations) establishes regulations to safeguard against hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The provisions of the Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure throughout the State of California. The Fire Code includes regulations regarding fire-resistance-rated construction, fire protection systems such as alarm and sprinkler systems, fire services features such as fire apparatus access roads, means of egress, fire safety during construction and demolition, and wildland-urban interface areas.

City of Visalia Fire Department Plan Check and Hydrant Ordinance

Visalia's requirements for new construction include provisions for the Fire Department to review building and Site plans prior to the issuance of any permit. The Fire Department ensures that proposed projects will be adequately served by water, and accessible to emergency vehicles. The Department also enforces the City's Hydrant Ordinance, which states that subdividers are responsible for the installation of water mains and hydrants and determines the minimum spacing for fire hydrants. Street dimensions are scrutinized to ensure that space will be preserved for ladder trucks to be stabilized, and for emergency vehicles to turn around. Basic requirements in the City's subdivision ordinance include 52-foot minimum right-of-way widths and a 53-foot turning radius for cul-de-sacs.

Discussion

a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable serve ratios, response times of other performance objectives for any of the public services:

a. Fire protection?

Less than Significant Impact: The VFD will provide fire protection services to the proposed development. The closest fire station is Station #53, located .7 miles southeast of the Project Site at 5025 W Walnut Ave. The Fire Department uses the National Fire Protection Association (NFPA) standard for fire protection services, which requires 1 responder per 1,000 residents. The addition of 225 residential units will increase the demand for fire protection services. The City currently has .48 responders per 1,000 residents. By 2030, the city expects growth up to a total of 210,000 residents. This would result in .32 responders per 1,000 residents. This will require an additional 85

on-duty responders by 2030 to meet 1 responder per 1,000 residents, or 41 new responders to meet the current ratio. The existing fire stations are placed to provide optimum service, however new stations will be needed to support the expanding city. To support the expansion of fire services, a development impact fee will be paid for fire services.

The timing of when new fire service facilities would be required or details about size and location cannot be known until such facilities are planned and proposed, and any attempt to analyze impacts to a potential future facility would be speculative. As new or expanded fire service facilities become necessary, construction or expansion projects would be subject to their own separate CEQA review in order to identify and mitigate any potential environmental impacts. Therefore, the impact is *less than significant.*

b. Police protection?

Less than Significant Impact: The VPD will provide services to the proposed development. The VPD headquarters are located approximately 3.4 miles northeast of the proposed Project Site. VPD Substation District 2 is located approximately 2.6 miles southeast of the Project Site. The development would increase the demand for police service with the addition of 225 residential units. The VPD does not establish service standards either in terms of officers per thousand residents or in incident response time but plans to maintain the current ratio of 1.7 officers per 1,000 residents. The Department has 143 sworn officers working out of two districts, as well as seven reserve sworn officers, 64 civilian officers, and 65 volunteers. The demand for additional officers and equipment will be compensated for by the development impact fee.

The timing of when new police service facilities would be required or details about size and location cannot be known until such facilities are planned and proposed, and any attempt to analyze impacts to a potential future facility would be speculative. As new or expanded police service facilities become necessary, construction or expansion projects would be subject to their own separate CEQA review in order to identify and mitigate any potential environmental impacts. Therefore, the impact is *less than significant*.

c. Schools?

Less than Significant Impact: The proposed Project is within the (VUSD) from Kindergarten through 12th Grade. The District includes 25 elementary schools, four middle schools, four traditional high schools, and alternative education programs. The City of Visalia predicts the generation rates shown below in Table 3-17.

School Type	Single Family Generation Rate	Students
Elementary School	0.448	101
Middle School	.092	21
High School	.156	35

Table 3-17: Student Generation Rates, City of Visalia General Plan

Since the proposed Project includes the addition of 225 single family homes, the number of students will increase by approximately 157. The proposed Project Site is located within the Visalia Planning Area and therefore, growth associated with the Project has been planned and expected. In addition to the goals and policies of the City's General Plan, future development is required to pay development impact fees to the school districts at the time of building permit issuance. These impact fees are used by the school districts to maintain existing and develop new facilities, as needed. Therefore, the impact is *less than significant.*

d. Parks?

Less than Significant Impact: The addition of 225 new residential units would result in additional usage of existing parks. Parks within a one-mile radius that would service the proposed development include Sunset Park and Constitution Park, as well as Plaza Park slightly over a mile away. The Project plans to include a 4.15-acre park in the southeast corner of the Site. Since the proposed Project would contribute its fair share to parks facilities as well as any development fees, the impact is *less than significant.*

e. Other public facilities?

Less than Significant Impact: The proposed Project would be required to pay a development impact fee for Public Facilities, including for the civic center, corporation yard, and libraries. Additional development fees will be paid to offset the increased demand for public services related to transportation, water, wastewater, groundwater recharge, storm drainage, and general governmental services. Fees for transportation, water, wastewater, and general government are based on building square footage and will be calculated prior to the issuance of building permits. Fees for groundwater recharge and storm drainage are based on site acreage. While the payment of development fees could result in the construction of new or altered public service facilities, no specific projects have been identified at this time. As new or expanded public service facilities become necessary, construction or expansion projects would be subject to their own separate CEQA review in order to identify and mitigate any potential environmental impacts. Therefore, the impact is *less than significant*.

XVI. PARKS AND RECREATION

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☑	☐
b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☑

Environmental Setting

There are 40 park facilities totaling 678 acres within the Visalia Planning Area. The City of Visalia provides diverse types of parks and open space facilities, or park types, to meet park and open space recreation needs of the community. Park types include:

- Pocket Parks: A park typically between one-half and two acres in size intended to serve the needs of a specific neighborhood within a half-mile radius. There are currently 17 pocket parks in Visalia.
- Neighborhood Parks: A park typically 2 to 5 acres in size that provides basic recreation activities for one or more neighborhoods. There are currently 19 neighborhood parks in Visalia.
- Community Parks: A park typically ranging from 5 to 12 acres in size or larger, which are intended to serve the recreational needs of a larger area of the city. There are currently 4 community parks in Visalia.
- Large City Parks: A park generally larger than 40 acres in size intended to serve the recreational needs of all city residents and to create opportunities for contact with the natural environment. These parks may include a concentration of sports fields, golf courses, and areas for picnicking and passive enjoyment of open space. There are currently 2 large city parks in Visalia.
- Natural Corridors and Greenways: A network of greenways of varying size intended to serve the recreational needs of city residents. These parks may include facilities such

as bikeways, walkways, and riding trails, and are primarily developed along the city's waterways. There is a total of 196 acres of natural corridors and greenways.

The Visalia Planning Area additionally contains two county parks and a public golf course. The golf course is not counted to the total amount of parkland. The Visalia General Plan states a total parkland standard of five acres of city parkland per 1,000 residents.

Regulatory Setting

Quimby Act

The 1975 Quimby Act (California Government Code section 66477) authorized cities and counties to pass ordinances requiring that developers set aside land, donate conservation easements, or pay fees for park improvements. The Act states that the dedication requirement of parkland can be a minimum of three acres per thousand residents or more and up to five acres per thousand residents if the existing ratio is greater than the minimum standard. Revenues generated through in-lieu fees collected and the Quimby Act cannot be used for the operation and maintenance of park facilities. In 1982, the Act was substantially amended. The amendments further defined acceptable uses of or restrictions on Quimby funds, provided acreage/population standards and formulas for determining the exaction, and indicated that the exactions must be closely tied (nexus) to a project's impacts as identified through studies required by the California Environmental Quality Act (CEQA).

City of Visalia General Plan

The 2030 General Plan includes the policies related to parks and recreation that correlate to the proposed project:

- *PSCU-P-2*: Strive to achieve and maintain a citywide standard of at least five acres of neighborhood and community parks per 1,000 residents.
- *PSCU-P-7*: Promote development of small pocket parks or play lots dispersed throughout new neighborhoods and in existing neighborhoods, where needed, on a voluntary basis in coordination with new infill development, consistent with the following planning guidelines:
    - Size: 0.5 to 2 acres; and
    - Facilities: the specific features of pocket parks should address the anticipated needs of nearby residents and/or workers. In a residential environment, the needs of small children and seniors should be emphasized. In mixed-use or commercial areas, lunchtime use by office workers and shoppers should be facilitated.

- *PSCU-P-10*: Adopt and implement parkland dedication requirements for all subdivisions, consistent with the Quimby Act and Policy PSCU-P-2. This requirement will be integrated with the City's Park Acquisition Development Fee Program.

Discussion

a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less than Significant Impact: The proposed Project is anticipated to increase the Visalia population by approximately 683 residents. Based on the desired parkland ratio of five acres per 1000 residents identified in the Visalia General Plan, the Project would need to provide approximately 3.42 acres of parkland/open space. The Project has 4.15 acres of parkland, more than the required amount. The impact is *less than significant.*

b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact: The proposed Project does not include any recreational facilities or require the construction or expansion of any recreational facilities that would have an adverse physical effect on the environment. There is *no impact.*

XVII. TRANSPORTATION

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☑	☐	☐
b) Conflict or be inconsistent with the CEQA guidelines Section 15064.3, Subdivision (b)?	☐	☐	☑	☐
d) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☑
e) Result in inadequate emergency access?	☐	☐	☐	☑

Environmental Setting

Vehicular Access

Vehicular access to the Project is available via South Roeben Street on the East side of the site, and South Shirk Road (Road 92) on the West side of the site. The Project includes a network of local streets that provide full access to the Project site.

Parking

Each Single-Family home will contain at least a two-car garage, as well as room for two more cars in the driveway. Street parking will be limited due to reduced street widths. During construction, workers will utilize existing parking areas and/or temporary construction staging areas for parking vehicles and equipment.

Regulatory Setting

CEQA Guidelines Section 15064.3, Subdivision (b): Criteria for Analyzing Transportation Impacts

(1) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact.

Projects that decrease vehicle miles traveled in the Project area compared to existing conditions should be considered to have a less than significant transportation impact.

(2) Transportation Projects. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, a lead agency may tier from that analysis as provided in Section 15152.

(3) Qualitative Analysis. If existing models or methods are not available to estimate the vehicle miles traveled for the particular Project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.

(4) Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

City of Visalia Standard Specifications

The City of Visalia Standard Specifications are developed and enforced by the City of Visalia Public Works Department to guide the development and maintenance of streets within the City. The cross-section drawings contained in the City's Standard Specifications dictate the development of roads within the City.

City of Visalia General Plan:

The 2030 General Plan includes the policies related to transportation that correlate to the proposed project:

- *T-P-3*: Design and build future roadways that complement and enhance the existing network, as shown on the General Plan Circulation Diagram, to ensure that each new and existing roadway continues to function as intended.
- *T-P-5*: Take advantage of opportunities to consolidate driveways, access points, and curb cuts along existing arterials when a change in development or a change in intensity occurs or when traffic operation or safety warrants.
- *T-P-10*: Manage local residential streets to limit average daily vehicle volumes to 1,500 or less and maintain average vehicle speeds between 15 and 25 miles per hour.

- *T-P-22*: Require all residential subdivisions to be designed to discourage use of local streets as a bypass to congested arterials, and when feasible, require access to residential development to be from collector streets.
- *T-P-23*: Require that all new developments provide right-of-way, which may be dedicated or purchased, and improvements (including necessary grading, installation of curbs, gutters, sidewalks, parkway/landscape strips, bike, and parking lanes) other city street design standards. Design standards will be updated following General Plan adoption.
- *T-P-24*: Require that proposed developments make necessary off-Site improvements if the location and traffic generation of a proposed development will result in congestion on major streets or failure to meet LOS D during peak periods or if it creates safety hazards.
- *T-P-26*: Require that future commercial developments or modifications to existing developments be designed with limited points of automobile ingress and egress, including shared access, onto major streets.
- *T-P-40*: Develop a community-wide trail system along selected planning area waterways, consistent with the Waterways and Trails Master Plan and General Plan diagrams.

Discussion

a) Would the Project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Less than Significant Impact with Mitigation Incorporated: The existing General Plan established LOS "D" as the minimum acceptable LOS standard on city facilities. A traffic study prepared for the Project (Appendix D) concluded that the Project would not result in a significant increase in vehicle or truck trips.

Table 3-18 shows the estimated vehicle trips generated for the proposed project. The proposed Project is expected to generate approximately 2,119 daily trips, including 155 AM peak hour trips (39 inbound, 116 outbound) and 212 PM peak hour trips (134 inbound, 78 outbound).

	Total Units	Daily*	AM Peak Hour*				PM Peak Hour*			
		Trips	% In: Out	In	Out	Total	% In: Out	In	Out	Total
Single-Family Detached Housing (ITE Code 210)	224	2119	25:75	39	116	155	63:37	134	78	212

Table 3-18: Proposed Project Trip Generation

Based on the number of peak hour trips calculated (between 200-499 residential trips in the peak hour), the study falls into Category II traffic impact analysis. Category II requires all signalized and major intersections be studied within a 1/2-mile radius of the Project.

Following are the intersections included in the study:

- Road 92/Shirk Street & State Route 198 Eastbound Ramps
- Road 92/Shirk Street & State Route 198 Westbound Ramps
- Road 92/Shirk Street & Tulare Avenue
- Road 92/Shirk Street & Walnut Avenue
- Roeben Street & Tulare Avenue
- Roeben Street & Walnut Avenue
- Street 3 and Tulare Avenue
- Street 6 and Tulare Avenue
- Avenue 4 and Shirk Street
- Avenue 6 and Roeben Street

In accordance with Category II requirements, analysis will be provided for the following scenarios:

- Existing: The current traffic conditions without any modifications or the proposed project.
- 2028 Cumulative (Opening Year): Projected traffic conditions for the year 2028 without the proposed project.
- 2028 Cumulative + Project: Projected traffic conditions for the year 2028 including the traffic generated by the proposed project.
- 2028 Cumulative + Project with Mitigation: Projected traffic conditions for the year 2028 including the traffic generated by the proposed project and any mitigation measures applied.
- 2033 Cumulative: Projected traffic conditions for the year 2033 without the proposed project.
- 2033 Cumulative + Project: Projected traffic conditions for the year 2033 including the traffic generated by the proposed project
- 2033 Cumulative + Project with Mitigation: Projected traffic conditions for the year 2033 including the traffic generated by the proposed project and any mitigation measures applied.

Based on the results of the Level of Service (LOS) analysis and the eight-hour vehicular volume warrants, and the City of Visalia thresholds for mitigation, it is recommended that signals be constructed at three intersections in order to operate at an acceptable level of service by the year 2033.

- Shirk Street and SR 198 WB Ramps
- Shirk Street and SR 138 EB Ramps
- Shirk Street and Walnut Avenue

The Project will pay its fair share of traffic impact fees to support payment of the signals. The Project will incorporate mitigation measure TRAN-1, which is constructing signals at Shirk Street and SR 198 WB Ramps, Shirk Street and SR 138 EB Ramps, and Shirk Street and Walnut Avenue by the year 2028 to operate at an acceptable level of service by the year 2033, with the Project contributing its fair share of traffic impact fees. There is *a less than significant impact with mitigation incorporated.*

b) Would the Project conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b)?

Less than Significant Impact: The City of Visalia's *VMT Thresholds and Implementation Guidelines* (Guidelines) document, prepared by LSA and adopted on March 15, 2021, provides guidance for determining a project's transportation impacts based on vehicle miles traveled (VMT). The Guidelines acknowledge that certain activities and projects may result in a reduction in VMT and GHG emissions and, therefore, a less than significant impact to transportation and circulation. A variety of projects may be screened out of a complicated VMT analysis due to the presumption described in the TA regarding the occurrence of less than significant impacts.

The Guidelines state: *"Residential, office, or mixed-use projects that are consistent with the City's General Plan and located within green-colored VMT zones, as shown in Figures 6, 7, and 8, respectively, are presumed to have similar low VMT profiles and could be screened out from further VMT analysis."*

The State of California Governor's Office of Planning and Research document entitled Technical Advisory on Evaluating Transportation Impacts in CEQA dated December 2018 (OPR Guidelines) provides the reasoning for the screen out. The OPR Guidelines state:

"Residential and office projects that are located in areas with low VMT, and that incorporate similar features (i.e., density, mix of uses, transit accessibility), will tend to exhibit similarly low VMT. Maps created with VMT data, for example from a travel survey or a travel demand model, can illustrate areas that are currently below the threshold VMT. Because new development in such locations would likely result in a similar level of VMT, such maps may be used to screen out residential and office projects from needing to prepare a detailed VMT analysis."

A Traffic Study for the proposed Project was prepared by Ruettgers & Schuler, and an evaluation of project vehicle miles traveled (VMT) was conducted based on VMT analysis guidelines adopted by the City of Visalia. The guidelines provide "screening thresholds" for identifying whether a land use project should be expected to result in a less than significant transportation impact under CEQA. Projects meeting one or more of these criteria would not be required to undergo a detailed VMT analysis. One of the screening criteria is "Project Location Screening". Development projects that are located in a low VMT zone would be expected to generate similar low vehicle miles travelled. Using the City of Visalia online VMT screening application, the project was determined to be located in TAZ 1358. Utilizing the "VMT Per Capita" metric due to residential project, the average VMT was determined to be 8.61 miles per capita. The average VMT per service population for Tulare County is 11.9. Therefore, the project is determined to be in a low VMT zone and the project would be expected to result in a *less than significant* transportation impact under CEQA. (See Figures 3-8 and 3-9).

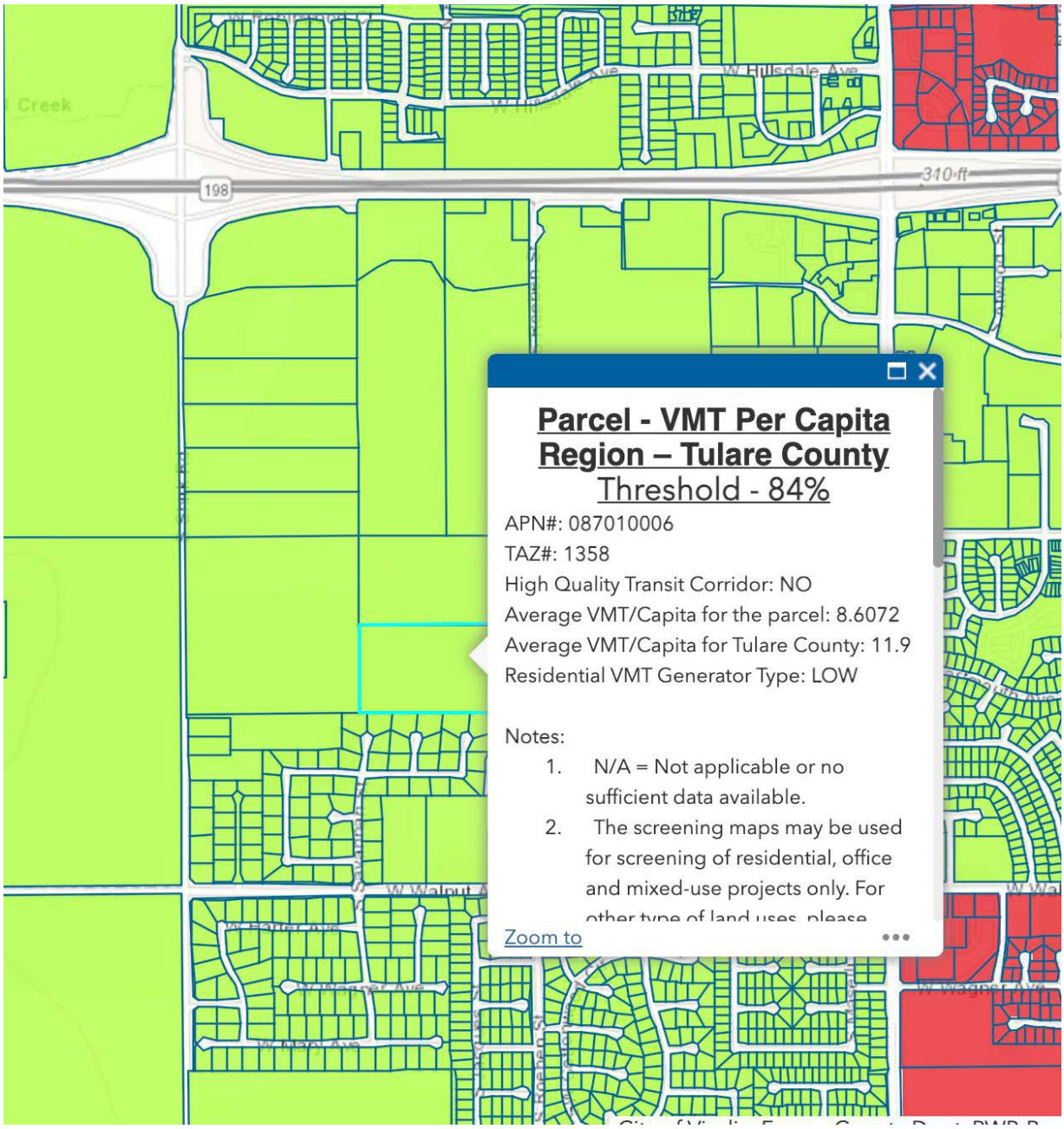


Figure 3-9: Visalia Existing VMT per Capita – First Parcel

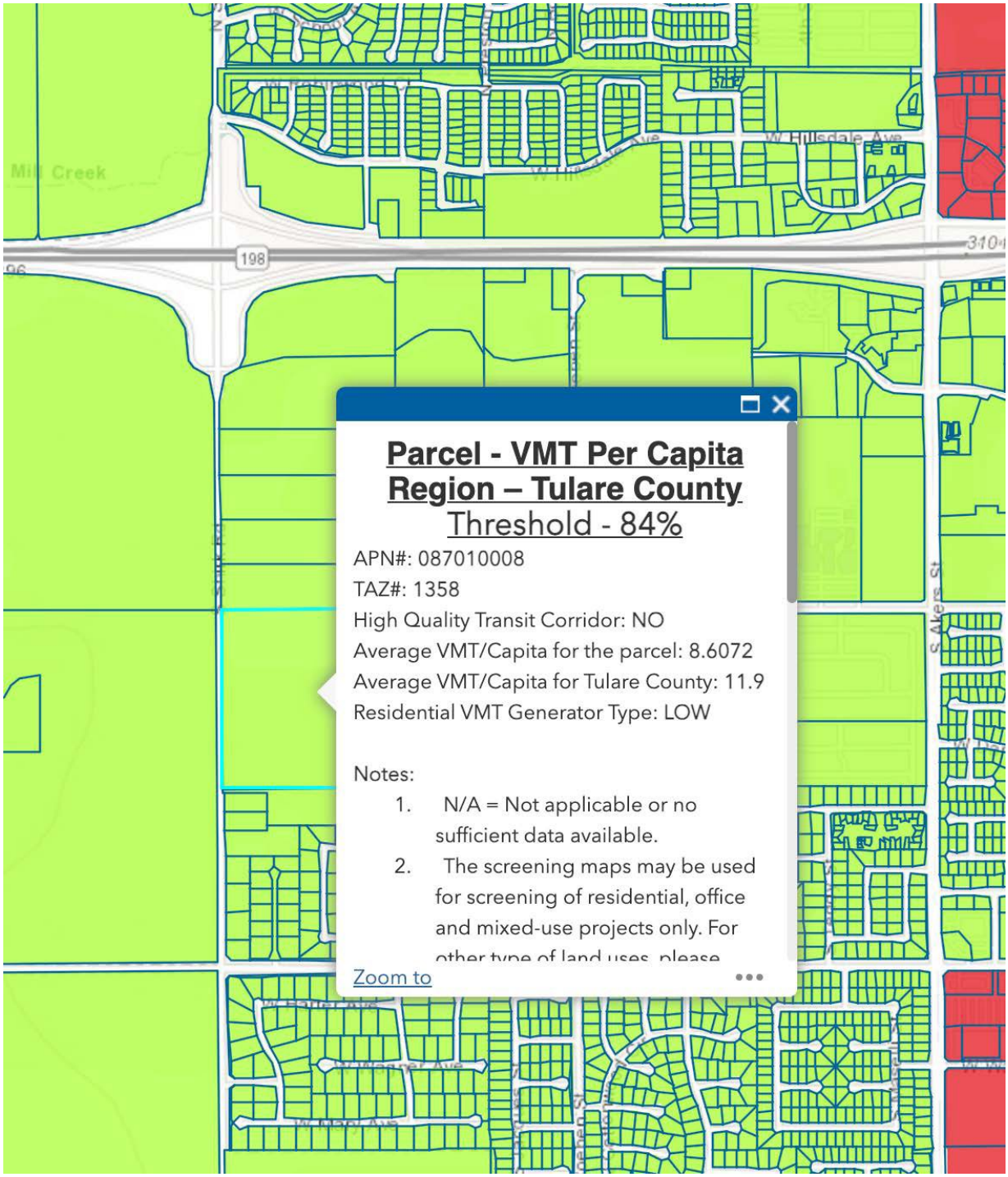


Figure 3-10: Visalia Existing VMT per Capita - Second Parcel

c) Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact: The Project does not propose any incompatible uses or include any design features that could increase traffic hazards. The Project does include three new vehicle access points on S Roeben Street, W Tulare Avenue, and S Shirk Road. This improvement will be subject to review by the City's engineer to ensure the new access point does not pose any safety risks due to the Project design. The proposed Project would not substantially increase hazards in or around the Project area there is *no impact.*

d) Would the Project result in inadequate emergency access?

No Impact: This Project would not result in inadequate emergency access. Emergency access to the Site would be via S Roeben Street, W Tulare Avenue, and S Shirk Road. During the first phase of construction, the access on S Shirk Road would not be built yet. A network of local roads within the proposed Project property provides full access to all buildings within the development. The Project would have no impact on emergency access.

Mitigation Measures for Impacts to Transportation:

Mitigation Measure TRAN-1: Based on the results of the Level of Service (LOS) analysis and the eight-hour vehicular volume warrants, and the City of Visalia thresholds for mitigation, signals shall be constructed at the following three intersections by 2028 in order to operate at an acceptable level of service by the year 2033:

- Shirk Street and SR 198 WB Ramps
- Shirk Street and SR 138 EB Ramps
- Shirk Street and Walnut Avenue

The Project applicant will pay its fair share of traffic impact fees to support payment of the signals.

XVIII. TRIBAL CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☑	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☑	☐	☐

Environmental Setting

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. Yokuts villages apparently extended up to, but not into, the mouths of the canyons on the northern and western fronts of the Tehachapi Mountains, well into the foothills and lower elevations of the Sierra Nevada on the east, and to the crest of the Temblor Range on the west. The Yokuts are Penutian speakers and are linguistically related to northern occupants of the San Joaquin Valley. The Yokuts settlement pattern was largely consistent, regardless of the specific tribe involved. Winter villages were typically located along lakeshores and major stream courses (as these existed circa AD 1800), with dispersal phase family camps located at elevated spots on the valley floor and near gathering areas in the foothills. Throughout Native California, and Yokuts territory in general, the acorn was a primary dietary component, along with a variety of gathered seeds. Valley tribes augmented this

resource with lacustrine and riverine foods, especially fish and wildfowl. Although population estimates vary and population size was greatly affected by the introduction of Euro-American diseases and social disruption, the Yokuts were one of the largest, most successful groups in Native California. Cook (1978) estimates that the Yokuts region contained 27 percent of the aboriginal population in the state at the time of contact; other estimates are even higher. Many Yokuts people continue to reside in the southern San Joaquin Valley today.

Cultural Resources Record Search

On October 13, 2023, Soar submitted a records search request to the Southern San Joaquin Valley Information Center (SSJVIC) located at the California State University, Bakersfield (Appendix A of the Cultural Resources Assessment). The purpose of this request was to identify any prehistoric or historical resources on or near the Project Site that had been previously recorded within the Project boundary and a 0.5-mile radius of the Project area and identify and review prior cultural resource investigations completed in or near the Project boundary. SSJVIC staff researched historical USGS topographic maps, reports of previous cultural resource investigations, archaeological Site and survey base maps, cultural resource records (DPR forms) as well as listings of the Historic Properties Directory of the Office of Historic Preservation, General Land Office Maps, Archaeological Determinations of Eligibility, and the California Inventory of Historic Resources. The results from the records search indicate two (2) cultural resource studies have been conducted within the Project area. According to the information on file, there is one (1) resource within the Project area. There are two (2) recorded resources within the 0.5-mile record search radius. There were seven (7) reports identified within a 0.5-mile radius of the Project area. There are no recorded tribal cultural resources within the Project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, or the California State Historic Landmarks.

Native American Consultation

The State requires lead agencies to consider the potential effects of proposed projects and consult with California Native American tribes during the local planning process for the purpose of protecting Traditional Tribal Cultural Resources through the California Environmental Quality Act (CEQA) Guidelines. Pursuant to PRC Section 21080.3.1, the lead agency shall begin consultation with the California Native American tribe that is traditionally and culturally affiliated with the geographical area of the proposed project. Such significant cultural resources are either sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a tribe which is either on or eligible for inclusion in the California Historic Register or local historic register, or, the lead agency, at its discretion, and support by substantial evidence, choose to treat the resources as a Tribal Cultural Resources (PRC Section 21074(a) (1-2)).

Additional information may also be available from the California Native American Heritage Commission's Sacred Lands File per PRC Section 5097.96 and the California Historical

Resources Information System administered by the California Office of Historic Preservation. Please also note that PRC Section 21082.3(c) contains provisions specific to confidentiality.

The site contains agricultural uses, vacant land, and an oak grove. If any artifacts are inadvertently discovered during ground-disturbing activities, existing federal, State, and local laws, and regulations as well as the mitigation measures will require construction activities to cease until such artifacts are properly examined and determined not to be of significance by a qualified cultural resource professional.

The California Native American Heritage Commission (NAHC) was contacted by SOAR Environmental Consulting on October 13, 2023, to conduct a Sacred Lands File (SLF) search, and to obtain a list of tribes culturally and geographically affiliated with the Project area. On December 1st, 2023, the NAHC indicated there are no Native American traditional cultural places or sacred sites within or near the Project area. The NAHC provided a list of five (5) Tulare County Native American groups and individuals affiliated with the local tribes. On December 4th, 2023, Ms. Froshour sent letters to all individuals describing the location, and the nature of the project. In each letter, Ms. Froshour included a request for information regarding prehistoric, historic, ethnographic land use, as well as contemporary Native American values. Soar Environmental did not receive comments from the Tulare County Native American groups or affiliated individuals regarding the proposed development at the project location.

Following AB 52, Native American Tribes that could potentially be impacted by the Project were contacted. The Tribes that were formally noticed of this Project were:

- Big Sandy Rancheria of Western Mono Indians
- Dunlap Band of Mono Indians
- Kern Valley Indian Community
- Santa Rosa Rancheria Tachi Yokut Tribe
- Tubatulabals of Kern Valley
- Tule River Indian Tribe
- Wuksache Indian Tribe/Eshom Valley Band

The City did not receive any comments for this project.

Regulatory Setting

Historical Resources

Historical resources are defined by CEQA as resources that are listed in or eligible for the California Register of Historical Resources, resources that are listed in a local historical resource register, or resources that are otherwise determined to be historical under California Public Resources Code Section 21084.1 or California Code of Regulations Section 15064.5. Under these definitions Historical Resources can include archaeological resources, Tribal cultural resources, and Paleontological Resources.

Archaeological Resources

As stated above, archaeological resources may be considered historical resources. If they do not meet the qualifications under the California Public Resources Code 21084.1 or California Code of Regulations Section 15064.5, they are instead determined to be "unique" as defined by the CEQA Statute Section 21083.2. A unique archaeological resource is an artifact, object, or Site that: (1) contains information (for which there is a demonstrable public interest) needed to answer important scientific research questions; (2) has a special and particular quality, such as being the oldest of its type or the best available example of its type; or (3) is directly associated with a scientifically recognized important prehistoric or historic event or person.

Tribal Cultural Resource (TCR)

Tribal Cultural Resources can include Site features, places, cultural landscapes, sacred places, or objects, which are of cultural value to a Tribe. It is either listed on or eligible for the CA Historic Register or a local historic register or determined by the lead agency to be treated as TCR.

Paleontological Resources

For the purposes of this section, "paleontological resources" refers to the fossilized plant and animal remains of prehistoric species. Paleontological Resources are a limited scientific and educational resource and are valued for the information they yield about the history of the earth and its ecology. Fossilized remains, such as bones, teeth, shells, and leaves, are found in geologic deposits (i.e., rock formations). Paleontological resources generally include the geologic formations and localities in which the fossils are collected.

Native American Reserve (NAR)

This designation recognizes tribal trust and reservation lands managed by a Native American Tribe under the United States Department of the Interior's Bureau of Indian Affairs over which the County has no land use jurisdiction. The County encourages adoption of tribal management plans for these areas that consider compatibility and impacts upon adjacent area facilities and plans.

National Historic Preservation Act

The National Historic Preservation Act was adopted in 1966 to preserve historic and archeological sites in the United States. The Act created the National Register of Historic Places, the list of National Historic Landmarks, and the State Historic Preservation offices.

California Historic Register

The California Historic Register was developed as a program to identify, evaluate, register, and protect Historical Resources in California. Historical resources may include, but are not limited to, "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically or archaeologically significant" (PRC §5020.1[j]). In addition, a resource included in a local register of historical resources or identified as significant in a local

survey conducted in accordance with the state guidelines are also considered historic resources under California Public Resources Code (PRC) Section 5020.1.
According to CEQA guidelines §15064.5 (a)(3), criteria for listing on the California Register of Historical Resources includes the following:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- Is associated with the lives of persons important in our past.
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- Has yielded, or may be likely to yield, information important in prehistory or history.

According to CEQA guidelines §21074 (a)(1), criteria for tribal cultural resources includes the following:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    - Included or determined to be eligible for inclusion in the California Register of Historical Resources.
    - Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

Protection of cultural resources within California is additionally regulated by PRC §5097.5, which prohibits destruction, defacing, or removal of any historic or prehistoric cultural features on land under the jurisdiction of State or local authorities.

City of Visalia General Plan

The 2030 General Plan includes the policies related to tribal resources that correlate to the proposed project:

- *OSC-P-42*: Establish requirements to avoid potential impacts to sites suspected of being archeologically, paleontologically, or historically significant or of concern, by:
- Requiring a records review for development proposed in areas that are considered archaeologically or paleontologically sensitive;
- Determining the potential effects of development and construction on archaeological or paleontological resources (as required by CEQA);
- Requiring pre-construction surveys and monitoring during any ground disturbance for all development in areas of historical and archaeological sensitivity (defined as areas identified according to the National Historic Preservation Act as part of the Section 106 process); and

- Implementing appropriate measures to avoid the identified impacts, as conditions of Project approval.

Discussion

a) Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

Less Than Significant Impact with Mitigation: The Project would not cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources. Based on the results of the records search, no previously recorded tribal cultural resources are located within the Project site. Although no tribal cultural resources were identified, the presence of remains or unanticipated cultural resources under the ground surface is possible. Therefore, Tribes that can potentially be impacted were consulted. The City did not receive any comments for this project. Implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and CUL-4 will ensure that impacts to this checklist item will be *less than significant with mitigation* incorporation.

ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less Than Significant Impact with Mitigation: The lead agency has not determined there to be any known tribal cultural resources located within the Project area. Additionally, there are not believed to be any paleontological resources or human remains buried within the Project area's vicinity. However, if resources were found to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resources to a California Native American Tribe. Implementation of Mitigation Measures CUL-1 and CUL-2 will ensure that any impacts resulting from Project implementation remain *less than significant with mitigation* incorporation.

Mitigation Measures for Impacts to Cultural Resources:

Mitigation Measure CUL-1: If previously unknown resources are encountered before or during grading activities, construction shall stop in the immediate vicinity of the find and a qualified historical resources specialist shall be consulted to determine whether the resource requires further study. The qualified historical resources specialist shall make recommendations to the City on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with Section 15064.5 of the CEQA Guidelines and the City's Historic Preservation Ordinance.

If the resources are determined to be unique historical resources as defined under Section 15064.5 of the CEQA Guidelines, measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate measures for significant resources could include avoidance or capping, incorporation of the Site in green space, parks, or open space, or data recovery excavations of the finds. No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any historical artifacts recovered as a result of mitigation shall be provided to a City-approved institution or person who is capable of providing long-term preservation to allow future scientific study.

Mitigation Measure CUL-2: In the event that human remains are unearthed during excavation and grading activities of any future development project, all activity shall cease immediately. Pursuant to Health and Safety Code (HSC) Section 7050.5, no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98(a). If the remains are determined to be of Native American descent, the coroner shall within 24 hours notify the Native American Heritage Commission (NAHC). The NAHC shall then contact the most likely descendent of the deceased Native American, who shall then serve as the consultant on how to proceed with the remains. Pursuant to PRC Section 5097.98(b), upon the discovery of Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.

Mitigation Measure CUL-3: Prior to the start of construction, an archaeological firm shall be hired to conduct a pre-construction survey and submit a comprehensive report to the lead agency for review and approval prior to the start of construction. This report should document the findings of the pre-construction survey and include an assessment of the potential impacts of the proposed Project on any identified archaeological resources. The

plan should outline specific measures that will be implemented, such as construction phasing, Site buffering, and artifact preservation, to protect the cultural resources, if any are discovered. To ensure compliance, the Project approval should require that the archaeological survey report and the associated plan be prepared by a qualified archaeologist and that the survey and monitoring activities be conducted in accordance with relevant state and federal regulations and best practices. By requiring a comprehensive archaeological survey report and a detailed mitigation plan, the lead agency can ensure that any impacts to archaeological resources are avoided or minimized to the fullest extent possible.

Mitigation Measure CUL-4: During any ground disturbing activities, an archaeological firm shall be hired to monitor the Project Site. The monitoring should be conducted by a qualified archaeologist with experience in the region and in compliance with relevant state and federal regulations and best practices. The monitoring should include regular Site inspections to identify any archaeological resources that may have been uncovered during ground-disturbing activities. If any resources are identified, the monitoring should also include documentation, mapping, and analysis of the resources, as well as the development of a mitigation plan to address any potential impacts to the resources.

XIX. UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relation of which could cause significant environmental effects?	☐	☐	☑	☐
b) Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☑	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☑	☐
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☑
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☑

Environmental Setting

Wastewater

Sewer services will be provided to the Site by the City of Visalia. The City owns a Water Conservation Plant (WCP) to treat wastewater. Presently, the WCP's permitted capacity as established by the Regional Water Quality Control Board (RWQCB) is 20 million gallons per day (mgd). A planned upgrade will increase the capacity to 26 mgd. The WCP currently has a daily flow of 13 mgd. The City of Visalia operates a sewer system divided into eight service areas. The system currently has over 468 miles of sewer pipe.

A Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS) Calculation memo was prepared for this project to calculate the assumed volume of effluent (Appendix F). The result showed the Project would have an expected flow of 48,000 Gallons per day and produce a total BOD of 1,009.21 lbs/day and 889.60 lbs/day of TSS.

Solid Waste

The City of Visalia provides residential waste pickup but has contracts with companies for other aspects. Sunset Waste Systems provides waste collection for commercial uses and processes recyclable material. Tulare County Compost and Biomass processes green waste.

The Tulare County Resource Management Agency manages solid waste disposal. Programs include household hazardous waste disposal, electronics recycling, tire recovery, yard waste recycling, metal recycling and appliance recovery programs. The county landfills approximately 300,000 tons of waste per year, which is equivalent to about 5 pounds per person per day or one ton per county resident per year. The County operates two disposal sites: the Visalia Disposal Site, northwest of Visalia; and the Woodville Disposal Site, southeast of Tulare. These sites have a remaining capacity of 23,115,774 cubic yards, with a total capacity of 30,555,116 cubic yards.

Water

The California Water Service Company (Cal Water) distributes groundwater supply. Cal Water's Visalia District supply wells extract groundwater from the Kaweah Groundwater Subbasin. The Cal Water system includes 75 operational groundwater wells, about one third of which have auxiliary power for backup. There are 519 miles of main pipeline in the system. The system includes two elevated 300,000-gallon storage tanks, an ion exchange treatment plant, four granular activated carbon filter plants and one nitrate blending facility.

The system currently has the capacity to pump 100,829 acre-feet per year (AFY), all from groundwater. This will be able to supply a growing population, as in 2010, 31,762 AF was needed. By 2030, the City is expected to use 43,002 AFY.

Regulatory Setting

CalRecycle

California Code of Regulations, Title 14, Natural Resources – Division 7 contains all current CalRecycle regulations regarding nonhazardous waste management in the state. These regulations include standards for the handling of solid waste, standards for the handling of compostable materials, design standards for disposal facilities, and disposal standards for specific types of waste.

Central Valley RWQCB

The Central Valley RWQCB requires a Stormwater Pollution Prevention Plan (SWPPP) for projects disturbing more than one acre of total land area. Because the Project is greater than one acre, a SWPPP to manage stormwater generated during Project construction will be required.

The Central Valley RWQCB regulates Wastewater Discharges to Land by establishing thresholds for discharged pollutants and implementing monitoring programs to evaluate program compliance. This program regulates approximately 1500 dischargers in the region.

The Central Valley RWQCB is also responsible for implementing the federal program, the National Pollutant Discharge Elimination System (NPDES). The NPDES Program is the federal permitting program that regulates discharges of pollutants to surface waters of the U.S. Under this program, a NPDES permit is required to discharge pollutants into Waters of the U.S. There are 350 permitted facilities within the Central Valley Region.

Cal Water Urban Water Management Plan (UWMP) – Visalia District

The UWMP describes the Visalia District service area, system demand and usage, available water resources, reliability of the water supply, and contingency planning for water shortage. It also contains a conservation section in compliance with SB X7-7 describing water usage reduction targets and implementation measures. The UWMP identifies five core programs for water conservation in the District that involve promotion of high-efficiency fixtures in residential settings, promotion of high-efficiency irrigation systems, and public information and education.

City of Visalia General Plan

The 2030 General Plan includes the objectives and policies related to utilities and service systems that correlate to the proposed project:

- *PSCU-O-14*: Provide for long-range community water needs by adopting best management practices for water use, conservation, groundwater recharge and wastewater and stormwater management.
- *PSCU-P-46*: Adopt and implement a Water Efficient Landscaping Ordinance for new and/or refurbished development that exceeds mandated sizes, and ensure that all new City parks, streetscapes, and landscaped areas conform to the Ordinance's requirements. The Ordinance should include provisions to optimize outdoor water use by:
    - Promoting appropriate use of plants and landscaping;
    - Establishing limitations on use of turf including size of turf areas and use of cool-season turf such as Fescue grasses, with exceptions for specified uses (e.g., recreation playing fields, golf courses, and parks);
    - Establishing water budgets and penalties for exceeding them;
    - Requiring automatic irrigation systems and schedules, including controllers that incorporate weather-based or other self-adjusting technology;
    - Promoting the use of recycled water; and
    - Minimizing overspray and runoff.
- *PSCU-P-59*: Require new developments to incorporate floodwater detention basins into Project designs where consistent with the Stormwater Master Plan and the Groundwater Recharge Plan.

- *PSCU-P-60*: Control urban and stormwater runoff and point and non-point discharge of pollutants. As part of the City's Stormwater Management Program, adopt and implement a Stormwater Management Ordinance to minimize stormwater runoff rates and volumes, control water pollution, and maximize groundwater recharge. New development will be required to include Low Impact Development features that reduce impermeable surface areas and increase infiltration. Such features may include, but are not limited to:
    - Canopy trees or shrubs to absorb rainwater;
    - Grading that lengthens flow paths over permeable surfaces and increases runoff travel time to reduce the peak hour flow rate;
    - Partially removing curbs and gutters from parking areas where appropriate to allow stormwater sheet flow into vegetated areas;
    - Use of permeable paving in parking lots and other areas characterized by significant impervious surfaces;
    - On-Site stormwater detention, use of bioswales and bioretention basins to facilitate infiltration; and
    - Integrated or subsurface water retention facilities to capture rainwater for use in landscape irrigation and other non-potable uses.

Discussion

a) Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relation of which could cause significant environmental effects?

Less than Significant Impact: The proposed Project would result in new water services. However, the proposed Site has no change of use proposal. Visalia's current system for water and wastewater has the capacity to manage the projected growth expected from the land uses in the General Plan. To compensate for these services, new development will be required to pay impact fees. It is not anticipated that implementation of the proposed Project would result in increased demand for any utility services beyond the planned conditions. There is *a less than significant impact.*

b) Would the Project have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less than Significant Impact: Cal Water will provide water services. The City's water supply source is comprised of 75 operational groundwater wells. The system currently has the capacity to pump 100,829 acre-feet per year (AFY), all from groundwater. This system can

support an expanding population, evidenced by the requirement for 31,762 acre-feet (AF) of resources in 2010. By 2030, the city is expected to use 43,002 AFY. Using average per-person water use in Visalia (183 gallons; 2020 Urban Water Management Plan) and the average household size in Visalia (3.05 persons; US Census Bureau), water demand for the proposed 225-unit residential development is estimated to be approximately 125,584 gallons of water daily, or about 141-acre feet per year. With the system capacity of 100,829 AFY, there will be enough water supply for the proposed project. The Project does not propose any new or expanded uses against the Visalia General Plan. The available water supply is expected to be enough to supply the projected population. In 2030, the projected demand is expected to 35,276 AF of groundwater, in 2035, there is expected to be 38,310 AF of groundwater, and in 2040 there is expected to be 41,258 AF of groundwater. To compensate for these services, new development will be required to pay impact fees for new water services, along with the reduced water use implementations from the polices set forth in the Visalia General Plan. Therefore, the impact is *less than significant.*

c) Would the Project result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less than Significant Impact: The Project does not propose any new or expanded uses and is therefore not anticipated to result in increased demand for wastewater treatment services beyond existing conditions in the Visalia General Plan. Additionally, the City's General Plan EIR has evaluated the site's current and future wastewater service demand. The current capacity of the wastewater system is approximately 20 mgd. It currently receives 13 mgd, leaving an available 7 mgd. In addition, a future upgrade plans to increase the capacity to 26 mgd. From the calculations in Appendix F, the project is expected to produce a total flow of 48,000 GPD.

Because the City's sewer system has the capacity to meet the Project site's expected demand for wastewater treatment, and it is not anticipated that the Project will increase the site's demand for wastewater treatment, it can be inferred that the existing wastewater treatment system has adequate capacity to serve the proposed project. There is a *less than significant impact.*

d) Would the Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

No Impact: The Project does not propose any new or expanded uses and is therefore not anticipated to result in increased generation of solid waste beyond existing conditions. Additionally, the disposal sites are at less than half capacity. Because the City's existing infrastructure has the capacity to accommodate the solid waste currently planned in the General Plan for expanded population, it can be inferred that the existing solid waste

infrastructure has adequate capacity to serve the proposed project. The Project would not generate solid waste more than State or Local Standards and there is *no impact.*

e) Would the Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact: This proposed Project conforms to all applicable statutes and regulations related to solid waste disposal. The proposed Project will comply with the adopted policies related to solid waste, and will comply with all applicable federal, state, and local statutes and regulations pertaining to disposal of solid waste, including recycling. Therefore, the proposed Project would have *no impact* on solid waste regulations.

XX. WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☑
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☑	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☑

Environmental Setting

There are no State Responsibility Areas (SRAs) within the vicinity of the Project site, and the Project Site is not categorized as a "Very High" Fire Hazard Severity Zone (FHSZ) by CalFire. This CEQA topic only applies to areas within an SRA or a Very High FHSZ.

Regulatory Setting

Fire Hazard Severity Zones: geographical areas designated pursuant to California Public Resources Codes Sections 4201 through 4204 and classified as Very High, High, or Moderate in State Responsibility Areas or as Local Agency Very High Fire Hazard Severity Zones designated pursuant to California Government Code, Sections 51175 through 51189.

Discussion

a) Would the Project substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact: The Project would not substantially impair an adopted emergency response plan or emergency evacuation plan. The Visalia Fire Department will review the Project to ensure the Project does not impair emergency response or emergency evacuation. Additionally, the proposed Project Site is not located within an SRA or a Very High FHSZ. There is *no impact.*

b) Due to slope, prevailing winds, and other factors, would the Project exacerbate wildfire risks, and thereby expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact: The Project is located on a flat area of agricultural and urban land which is at little risk of fire. Additionally, the proposed Project Site is not located within an SRA or a Very High FHSZ. There is *no impact.*

c) Would the Project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Less than Significant Impact: The construction of the Project involves adding new local residential streets, and new and relocated utilities. Utilities such as emergency water sources and power lines would be included as part of the proposed development, however all improvements would be subject to City standards and Fire Chief approval. The proposed Project would not exacerbate fire risk and the impact would be *less than significant.*

d) Would the Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire instability, or drainage changes?

No Impact: The Project Site is not located in an area designated as a Fire Hazard Severity Zone and lands associated with the Project Site are relatively flat. Therefore, the Project would not be susceptible to downslope or downstream flooding or landslides as a result of post-fire instability or drainage changes. There is *no impact.*

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Does the Project have the potential substantially to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☑	☐	☐
b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☑	☐
c) Does the Project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☑	☐

Discussion

a) Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less than Significant Impact with Mitigation: This initial study/mitigated negative declaration found the Project could have significant impacts on traffic, biological resources, hydrology and water quality, historical, and Tribal cultural resources. However, implementation of the identified mitigation measures for each respective section would ensure that impacts are *less than significant with mitigation incorporation.*

b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less than Significant Impact: CEQA Guidelines Section 15064(h) states that a Lead Agency shall consider whether the cumulative impact of a Project is significant and whether the effects of the Project are cumulatively considerable. The assessment of the significance of the cumulative effects of a Project must, therefore, be conducted in connection with the effects of past projects, other current projects, and probable future projects. Due to the nature of the Project and consistency with environmental policies, incremental contributions to impacts are considered less than cumulatively considerable. The proposed Project would not contribute substantially to adverse cumulative conditions, or create any substantial indirect impacts (i.e., increase in population could lead to an increased need for housing, increase in traffic, air pollutants, etc). Impacts would be *less than significant*.

c) Does the Project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant Impact: The analyses of environmental issues contained in this Initial Study indicate that the Project is not expected to have substantial impact on human beings, either directly or indirectly. Mitigation measures have been incorporated in the Project design to reduce all potentially significant impacts to less than significant, which results in a *less than significant* impact to this checklist item.

3.6 MITIGATION MONITORING AND REPORTING PROGRAM

As required by Public Resources Code Section 21081.6, subd. (a)(1), a Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the Project in order to monitor the implementation of the mitigation measures that have been adopted for the project. This Mitigation Monitoring and Reporting Program (MMRP) has been created based upon the findings of the Initial Study/Mitigated Negative Declaration (IS/MND) for the Elliott Property Subdivision Project in the City of Visalia.

The first column of the table identifies the mitigation measure. The second column names the party responsible for carrying out the required action. The third column, "Timing of Mitigation Measure" identifies the time the mitigation measure should be initiated. The fourth column, "Responsible Party for Monitoring," names the party ensuring that the mitigation measure is implemented. The last column will be used by the City to ensure that the individual mitigation measures have been monitored.

Plan checking and verification of mitigation compliance shall be the responsibility of the City of Visalia.

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
Mitigation Measure BIO-1: Swainson's Hawk Nesting Habitat: If construction, grading, or Project-related improvements are to commence between March 1 and September 15, a focused survey for Swainson's hawk nests on the site and within ¼ mile of the site shall be conducted by a qualified biologist no later than 30 days prior to the start of construction work (including clearing and grubbing). If active nests are found, the California Fish and Wildlife shall be contacted to determine appropriate protective measures, and these measures shall be implemented prior to the start of any ground-disturbing activities. If no active nests are found during the focused survey, no further mitigation will be required.	Project Applicant	Prior to the Start of Construction	Contractor/ Lead Agency	
Mitigation Measure BIO-1a: Nesting Bird and Roosting Bat Survey: If Project-related activities are scheduled between February 1 to August 31 (the typical nesting season), a focused survey for nests shall be conducted by a Designated Biologist within three (3) calendar days prior to the beginning of Project-related activities. The Designated Biologist shall survey a minimum radius of 500-feet for MBTA birds around the Project Area and for sign of roosting bats. If no active nests or roosts are found, project activities may proceed as scheduled.	Project Applicant	Prior to the Start of Construction	Contractor/ Lead Agency	
Mitigation Measure BIO-1b: Active Nests or Roosts: If an active nest or roost is found, active nests should be avoided, and a no disturbance or destruction buffer shall be determined and established by a Designated Biologist through consultation with CDFW. A report will be prepared documenting any active nest(s) and CDFW will be contacted and consulted in order to approve an adequate buffer size for the species. The buffer shall be kept in place until after the breeding nesting season or the Designated Biologist confirms the young have fledged, are foraging independently, and the nest is no longer active for the season. The extent of these buffers shall be determined by CDFW and established by the Designated Biologist and will depend on the species present, the level of noise or construction disturbance, line of sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers.	Project Applicant	Prior to the Start of Construction		

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
Mitigation Measure BIO-1c: Project Delay: If a lapse in project-related work of fourteen (14) calendar days or longer occurs, the Designated Biologist shall complete another focused survey before Project work can be reinitiated.	Project Applicant	Ongoing During Construction	Contractor/ Lead Agency	
Mitigation Measure CUL-1: If previously unknown resources are encountered before or during grading activities, construction shall stop in the immediate vicinity of the find and a qualified historical resources specialist shall be consulted to determine whether the resource requires further study. The qualified historical resources specialist shall make recommendations to the City on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with Section 15064.5 of the CEQA Guidelines and the City's Historic Preservation Ordinance. If the resources are determined to be unique historical resources as defined under Section 15064.5 of the CEQA Guidelines, measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate measures for significant resources could include avoidance or capping, incorporation of the Site in green space, parks, or open space, or data recovery excavations of the finds. No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any historical artifacts recovered as a result of mitigation shall be provided to a City-approved institution or person who is capable of providing long-term preservation to allow future scientific study.	Project Applicant	Ongoing during construction	Contractor/ Lead Agency	
Mitigation Measure CUL-2: In the event that human remains are unearthed during excavation and grading activities of any future development project, all activity shall cease immediately. Pursuant to Health and Safety Code (HSC) Section 7050.5, no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98(a). If the remains are determined to be of Native American descent, the coroner shall within 24 hours notify the Native American Heritage Commission (NAHC). The NAHC shall then contact the most likely descendent of the deceased Native American, who shall then serve as the	Project Applicant	Ongoing during construction	Contractor/ Lead Agency	

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
consultant on how to proceed with the remains. Pursuant to PRC Section 5097.98(b), upon the discovery of Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.				
Mitigation Measure CUL-3: Prior to the start of construction, an archaeological firm shall be hired to conduct a pre-construction survey and submit a comprehensive report to the lead agency for review and approval prior to the start of construction. This report should document the findings of the pre-construction survey and include an assessment of the potential impacts of the proposed Project on any identified archaeological resources. The plan should outline specific measures that will be implemented, such as construction phasing, Site buffering, and artifact preservation, to protect the cultural resources, if any are discovered. To ensure compliance, the Project approval should require that the archaeological survey report and the associated plan be prepared by a qualified archaeologist and that the survey and monitoring activities be conducted in accordance with relevant state and federal regulations and best practices. By requiring a comprehensive archaeological survey report and a detailed mitigation plan, the lead agency can ensure that any impacts to archaeological resources are avoided or minimized to the fullest extent possible.	Project Applicant	Prior to the Start of Construction	Contractor/ Lead Agency	
Mitigation Measure CUL-4: During any ground disturbing activities, an archaeological firm shall be hired to monitor the Project Site. The monitoring should be conducted by a qualified archaeologist with experience in the region and in compliance with relevant state and federal regulations and best practices. The monitoring should include regular Site inspections to identify any archaeological resources that may have been uncovered during ground-disturbing	Project Applicant	Ongoing during construction	Contractor/ Lead Agency	

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
activities. If any resources are identified, the monitoring should also include documentation, mapping, and analysis of the resources, as well as the development of a mitigation plan to address any potential impacts to the resources.				
Mitigation Measure HYD-1: Prior to the issuance of any construction/grading permit and/or the commencement of any clearing, grading, or excavation, the Applicant shall submit a Notice of Intent (NOI) for discharge from the Project Site to the California SWRCB Storm Water Permit Unit. • Prior to issuance of grading permits for Phase 1 the Applicant shall submit a copy of the NOI to the City. • The City shall review noticing documentation prior to approval of the grading permit. City monitoring staff will inspect the Site during construction for compliance.	Project Applicant	Prior to the Start of Construction	Contractor/ Lead Agency	
Mitigation Measure HYD-2: The Applicant shall require the building contractor to prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) to the City 45 days prior to the start of work for approval. The contractor is responsible for understanding the State General Permit and instituting the SWPPP during construction. A SWPPP for Site construction shall be developed prior to the initiation of grading and implemented for all construction activity on the Project Site in excess of one (1) acre, or where the area of disturbance is less than one acre but is part of the Project's plan of development that in total disturbs one or more acres. The SWPPP shall identify potential pollutant sources that may affect the quality of discharges to storm water and shall include specific BMPs to control the discharge of material from the site. The following BMP methods shall include, but would not be limited to: • Dust control measures will be implemented to ensure success of all onsite activities to control fugitive dust; • A routine monitoring plan will be implemented to ensure success of all onsite erosion and sedimentation control measures; • Provisional detention basins, straw bales, erosion control blankets, mulching, silt fencing, sand bagging, and soil stabilizers will be used; • Soil stockpiles and graded slopes will be covered after two weeks of inactivity and 24		45 Days Prior to the Start of Construction	Contractor/ Lead Agency	

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
hours prior to and during extreme weather conditions; and, • BMPs will be strictly followed to prevent spills and discharges of pollutants onsite, such as material storage, trash disposal, construction entrances, etc.				
Mitigation Measure HYD-3: A Development Maintenance Manual for the Project shall include comprehensive procedures for maintenance and operations of any stormwater facilities to ensure long-term operation and maintenance of post-construction stormwater controls. The maintenance manual shall require that stormwater BMP devices be inspected, cleaned, and maintained in accordance with the manufacturer's maintenance conditions. The manual shall require that devices be cleaned prior to the onset of the rainy season (i.e., mid-October) and immediately after the end of the rainy season (i.e., mid-May). The manual shall also require that all devices be checked after major storm events. The Development Maintenance Manual shall include the following: • Runoff shall be directed away from trash and loading dock areas; • Bins shall be lined or otherwise constructed to reduce leaking of liquid wastes; • Trash and loading dock areas shall be screened or walled to minimize offsite transport of trash; and • Impervious berms, trench catch basin, drop inlets, or overflow containment structures nearby docks and trash areas shall be installed to minimize the potential for leaks, spills or wash down water to enter the drainage system.	Project Applicant	Prior to the Start of Construction	Contractor/ Lead Agency	
Mitigation Measure TRAN-1: Based on the results of the Level of Service (LOS) analysis and the eight-hour vehicular volume warrants, and the City of Visalia thresholds for mitigation, signals shall be constructed at the following three intersections by 2028 in order to operate at an acceptable level of service by the year 2033: • Shirk Street and SR 198 WB Ramps • Shirk Street and SR 138 EB Ramps • Shirk Street and Walnut Avenue The Project applicant will pay its fair share of traffic impact fees to support payment of the signals.	Project Applicant	Prior to the Start of Construction	Contractor/ Lead Agency	

3.7 Supporting Information and Sources

1. AB 3098 List
2. EMFAC2014
3. Tulare County General Plan
4. City of Visalia General Plan
5. City of Visalia General Plan MEIR
6. City of Visalia Greenhouse Gas Reduction Plan
7. City of Visalia Zoning Ordinance
8. Engineering Standards, City of Visalia
9. SJVAPCD Regulations and Guidelines, Ambient Air Quality Standards & Attainment Status
10. FEMA Flood Maps
11. California Air Resources Board's (CARB's) Air Quality and Land Use Handbook
12. 2019 California Environmental Quality Act CEQA Guidelines
13. California Building Code
14. California Stormwater Pollution Prevention Program (SWPPP)
15. "Construction Noise Handbook." U.S. Department of Transportation/Federal Highway Administration.
16. Government Code Section 65962.5
17. California Environmental Protection Agency (CEPA) San Joaquin Valley Air Pollution Control District Mitigation Measures (http://www.valleyair.org/transportation/Mitigation-Measures.pdf
18. Southern California Edison 2019 Power Content Label
19. Transit Noise and Vibration Impact Assessment, Federal Transit Administration, September 2018.
20. 2020 U.S. Census
21. California Department of Transportation Scenic Roadways
22. EPA, Intergovernmental Panel on Climate Change
23. 2020 Cal Water Urban Water Management Plan (UWMP) – Visalia District
24. State of California Governor's Office of Planning and Research
25. Phase I Cultural Resource Assessment – SOAR Environmental Consulting
26. Biological Resource Assessment – SOAR Environmental Consulting
27. Traffic Study/VMT Assessment - Ruettgers & Schuler Civil Engineers

Section 4

List of Preparers

City of Visalia
315 E Acequia Ave
Visalia, CA 93291

SECTION 4
List of Preparers

Project Title: Elliott Property Subdivision

List of Preparers

4-Creeks Inc.

- David Duda, AICP, GISP
- Molly Baumeister, Planner/Project Manager
- Nate Antepenko, Associate Planner
- Lisa M. Wallis-Dutra, Sr. Traffic Engineer

Persons and Agencies Consulted

The following individuals and agencies contributed to this Initial Study/Mitigated Negative Declaration:

City of Visalia

- Cristobal Carrillo, Planning Division
- Brandon Smith, Planning Division
- Leslie Blair, Senior Civil Engineer
- Adrian Rubalcaba, Associate Engineer

SOAR Environmental Consulting

- Heather Froshour, M.A., R.P.A., Senior Archaeologist

Ruettgers & Schuler Civil Engineers

- Ian Parks, PE

California Historic Resources Information System

- Celeste Thomson, Coordinator

Appendix A

CalEEMod Report

Part 1

Projected Emissions from CalEEMod

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Elliot Subdivision

Tulare County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	224.00	Dwelling Unit	59.13	403,200.00	641

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	51
Climate Zone	7			**Operational Year**	2030
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot Acreage Established

Construction Phase -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	72.73	59.13
tblWoodstoves	NumberCatalytic	59.13	0.00
tblWoodstoves	NumberNoncatalytic	59.13	0.00

2.0 Emissions Summary

Elliot Subdivision - Tulare County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.0231	0.2313	0.1597	3.3000e-004	0.1866	0.0105	0.1971	0.0882	9.6200e-003	0.0978	0.0000	29.3733	29.3733	9.2300e-003	3.0000e-005	29.6126
2025	0.2963	2.7064	2.8528	6.3000e-003	0.8076	0.1091	0.9168	0.3353	0.1011	0.4364	0.0000	553.8911	553.8911	0.1456	5.4600e-003	559.1575
2026	0.2107	1.7848	2.3655	4.7800e-003	0.1049	0.0701	0.1750	0.0284	0.0660	0.0943	0.0000	420.7664	420.7664	0.0731	0.0104	425.6828
2027	0.2085	1.7819	2.3499	4.7500e-003	0.1049	0.0701	0.1750	0.0284	0.0659	0.0943	0.0000	417.8063	417.8063	0.0729	0.0101	422.6322
2028	0.2058	1.7728	2.3281	4.7000e-003	0.1045	0.0698	0.1743	0.0283	0.0657	0.0939	0.0000	413.4940	413.4940	0.0725	9.7800e-003	418.2194
2029	0.1859	1.6243	2.2350	4.3200e-003	0.0840	0.0664	0.1505	0.0227	0.0622	0.0850	0.0000	379.5904	379.5904	0.0755	7.3900e-003	383.6802
2030	3.8004	0.0828	0.1903	3.5000e-004	5.6200e-003	3.0900e-003	8.7100e-003	1.4900e-003	3.0900e-003	4.5900e-003	0.0000	30.0568	30.0568	1.2600e-003	9.0000e-005	30.1157
Maximum	**3.8004**	**2.7064**	**2.8528**	**6.3000e-003**	**0.8076**	**0.1091**	**0.9168**	**0.3353**	**0.1011**	**0.4364**	**0.0000**	**553.8911**	**553.8911**	**0.1456**	**0.0104**	**559.1575**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.0231	0.2313	0.1597	3.3000e-004	0.1866	0.0105	0.1971	0.0882	9.6200e-003	0.0978	0.0000	29.3733	29.3733	9.2300e-003	3.0000e-005	29.6126
2025	0.2963	2.7064	2.8528	6.3000e-003	0.8076	0.1091	0.9168	0.3353	0.1011	0.4364	0.0000	553.8906	553.8906	0.1456	5.4600e-003	559.1569
2026	0.2107	1.7848	2.3655	4.7800e-003	0.1049	0.0701	0.1750	0.0284	0.0660	0.0943	0.0000	420.7661	420.7661	0.0731	0.0104	425.6824
2027	0.2085	1.7819	2.3499	4.7500e-003	0.1049	0.0701	0.1750	0.0284	0.0659	0.0943	0.0000	417.8059	417.8059	0.0729	0.0101	422.6318
2028	0.2058	1.7728	2.3281	4.7000e-003	0.1045	0.0698	0.1743	0.0283	0.0657	0.0939	0.0000	413.4936	413.4936	0.0725	9.7800e-003	418.2191
2029	0.1859	1.6243	2.2350	4.3200e-003	0.0840	0.0664	0.1505	0.0227	0.0622	0.0850	0.0000	379.5900	379.5900	0.0755	7.3900e-003	383.6799
2030	3.8004	0.0828	0.1903	3.5000e-004	5.6200e-003	3.0900e-003	8.7100e-003	1.4900e-003	3.0900e-003	4.5900e-003	0.0000	30.0568	30.0568	1.2600e-003	9.0000e-005	30.1157
Maximum	**3.8004**	**2.7064**	**2.8528**	**6.3000e-003**	**0.8076**	**0.1091**	**0.9168**	**0.3353**	**0.1011**	**0.4364**	**0.0000**	**553.8906**	**553.8906**	**0.1456**	**0.0104**	**559.1569**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	**12-1-2024**	**2-28-2025**	0.8845	0.8845
3	**3-1-2025**	**5-31-2025**	1.0169	1.0169
4	**6-1-2025**	**8-31-2025**	0.6930	0.6930
5	**9-1-2025**	**11-30-2025**	0.4991	0.4991

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6	**12-1-2025**	**2-28-2026**	0.4934	0.4934
7	**3-1-2026**	**5-31-2026**	0.5025	0.5025
8	**6-1-2026**	**8-31-2026**	0.5018	0.5018
9	**9-1-2026**	**11-30-2026**	0.4977	0.4977
10	**12-1-2026**	**2-28-2027**	0.4921	0.4921
11	**3-1-2027**	**5-31-2027**	0.5012	0.5012
12	**6-1-2027**	**8-31-2027**	0.5005	0.5005
13	**9-1-2027**	**11-30-2027**	0.4964	0.4964
14	**12-1-2027**	**2-29-2028**	0.4964	0.4964
15	**3-1-2028**	**5-31-2028**	0.5001	0.5001
16	**6-1-2028**	**8-31-2028**	0.4994	0.4994
17	**9-1-2028**	**11-30-2028**	0.4953	0.4953
18	**12-1-2028**	**2-28-2029**	0.4899	0.4899
19	**3-1-2029**	**5-31-2029**	0.4990	0.4990
20	**6-1-2029**	**8-31-2029**	0.4983	0.4983
21	**9-1-2029**	**11-30-2029**	0.3807	0.3807
22	**12-1-2029**	**2-28-2030**	1.6537	1.6537
23	**3-1-2030**	**5-31-2030**	2.3305	2.3305
		Highest	2.3305	2.3305

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.0126	0.1029	1.6945	6.2000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	99.7553	99.7553	4.4500e-003	1.7800e-003	100.3967
Energy	0.0287	0.2453	0.1044	1.5700e-003		0.0198	0.0198		0.0198	0.0198	0.0000	599.4291	599.4291	0.0321	8.4300e-003	602.7440
Mobile	0.7910	1.2261	7.5014	0.0185	2.1955	0.0142	2.2097	0.5871	0.0133	0.6004	0.0000	1,706.5533	1,706.5533	0.0840	0.0880	1,734.8701
Waste						0.0000	0.0000		0.0000	0.0000	46.8422	0.0000	46.8422	2.7683	0.0000	116.0496
Water						0.0000	0.0000		0.0000	0.0000	4.6302	19.7162	24.3464	0.4772	0.0114	39.6834
Total	**2.8322**	**1.5743**	**9.3003**	**0.0207**	**2.1955**	**0.0500**	**2.2455**	**0.5871**	**0.0492**	**0.6362**	**51.4724**	**2,425.4539**	**2,476.9262**	**3.3660**	**0.1096**	**2,593.7437**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.0126	0.1029	1.6945	6.2000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	99.7553	99.7553	4.4500e-003	1.7800e-003	100.3967
Energy	0.0287	0.2453	0.1044	1.5700e-003		0.0198	0.0198		0.0198	0.0198	0.0000	599.4291	599.4291	0.0321	8.4300e-003	602.7440
Mobile	0.7910	1.2261	7.5014	0.0185	2.1955	0.0142	2.2097	0.5871	0.0133	0.6004	0.0000	1,706.5533	1,706.5533	0.0840	0.0880	1,734.8701
Waste						0.0000	0.0000		0.0000	0.0000	46.8422	0.0000	46.8422	2.7683	0.0000	116.0496
Water						0.0000	0.0000		0.0000	0.0000	4.6302	19.7162	24.3464	0.4772	0.0114	39.6834
Total	**2.8322**	**1.5743**	**9.3003**	**0.0207**	**2.1955**	**0.0500**	**2.2455**	**0.5871**	**0.0492**	**0.6362**	**51.4724**	**2,425.4539**	**2,476.9262**	**3.3660**	**0.1096**	**2,593.7437**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	12/7/2024	1/31/2025	5	40	
2	Grading	Grading	2/1/2025	7/4/2025	5	110	
3	Building Construction	Building Construction	7/5/2025	10/5/2029	5	1110	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	Paving	Paving	10/6/2029	1/18/2030	5	75	
5	Architectural Coating	Architectural Coating	1/19/2030	5/3/2030	5	75	

Acres of Grading (Site Preparation Phase): 60

Acres of Grading (Grading Phase): 330

Acres of Paving: 0

Residential Indoor: 816,480; Residential Outdoor: 272,160; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	81.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1854	0.0000	0.1854	0.0879	0.0000	0.0879	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0226	0.2310	0.1559	3.2000e-004		0.0105	0.0105		9.6100e-003	9.6100e-003	0.0000	28.4385	28.4385	9.2000e-003	0.0000	28.6684
Total	**0.0226**	**0.2310**	**0.1559**	**3.2000e-004**	**0.1854**	**0.0105**	**0.1958**	**0.0879**	**9.6100e-003**	**0.0975**	**0.0000**	**28.4385**	**28.4385**	**9.2000e-003**	**0.0000**	**28.6684**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.3000e-004	3.8200e-003	1.0000e-005	1.2200e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9348	0.9348	3.0000e-005	3.0000e-005	0.9441
Total	**4.9000e-004**	**3.3000e-004**	**3.8200e-003**	**1.0000e-005**	**1.2200e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9348**	**0.9348**	**3.0000e-005**	**3.0000e-005**	**0.9441**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1854	0.0000	0.1854	0.0879	0.0000	0.0879	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0226	0.2310	0.1559	3.2000e-004		0.0105	0.0105		9.6100e-003	9.6100e-003	0.0000	28.4385	28.4385	9.2000e-003	0.0000	28.6684
Total	**0.0226**	**0.2310**	**0.1559**	**3.2000e-004**	**0.1854**	**0.0105**	**0.1958**	**0.0879**	**9.6100e-003**	**0.0975**	**0.0000**	**28.4385**	**28.4385**	**9.2000e-003**	**0.0000**	**28.6684**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.3000e-004	3.8200e-003	1.0000e-005	1.2200e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9348	0.9348	3.0000e-005	3.0000e-005	0.9441
Total	**4.9000e-004**	**3.3000e-004**	**3.8200e-003**	**1.0000e-005**	**1.2200e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9348**	**0.9348**	**3.0000e-005**	**3.0000e-005**	**0.9441**

3.2 Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2396	0.0000	0.2396	0.1176	0.0000	0.1176	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0284	0.2902	0.2060	4.4000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	38.4870	38.4870	0.0125	0.0000	38.7982
Total	**0.0284**	**0.2902**	**0.2060**	**4.4000e-004**	**0.2396**	**0.0125**	**0.2521**	**0.1176**	**0.0115**	**0.1291**	**0.0000**	**38.4870**	**38.4870**	**0.0125**	**0.0000**	**38.7982**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	3.9000e-004	4.7600e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.2219	1.2219	4.0000e-005	4.0000e-005	1.2335
Total	**6.1000e-004**	**3.9000e-004**	**4.7600e-003**	**1.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.2219**	**1.2219**	**4.0000e-005**	**4.0000e-005**	**1.2335**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2396	0.0000	0.2396	0.1176	0.0000	0.1176	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0284	0.2902	0.2060	4.4000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	38.4870	38.4870	0.0125	0.0000	38.7982
Total	**0.0284**	**0.2902**	**0.2060**	**4.4000e-004**	**0.2396**	**0.0125**	**0.2521**	**0.1176**	**0.0115**	**0.1291**	**0.0000**	**38.4870**	**38.4870**	**0.0125**	**0.0000**	**38.7982**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	3.9000e-004	4.7600e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.2219	1.2219	4.0000e-005	4.0000e-005	1.2335
Total	**6.1000e-004**	**3.9000e-004**	**4.7600e-003**	**1.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.2219**	**1.2219**	**4.0000e-005**	**4.0000e-005**	**1.2335**

3.3 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5062	0.0000	0.5062	0.2010	0.0000	0.2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1596	1.5369	1.4482	3.4100e-003		0.0622	0.0622		0.0572	0.0572	0.0000	299.7842	299.7842	0.0970	0.0000	302.2081
Total	**0.1596**	**1.5369**	**1.4482**	**3.4100e-003**	**0.5062**	**0.0622**	**0.5684**	**0.2010**	**0.0572**	**0.2582**	**0.0000**	**299.7842**	**299.7842**	**0.0970**	**0.0000**	**302.2081**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2500e-003	2.0900e-003	0.0253	7.0000e-005	8.7600e-003	4.0000e-005	8.8000e-003	2.3300e-003	4.0000e-005	2.3700e-003	0.0000	6.4929	6.4929	1.9000e-004	1.9000e-004	6.5548
Total	**3.2500e-003**	**2.0900e-003**	**0.0253**	**7.0000e-005**	**8.7600e-003**	**4.0000e-005**	**8.8000e-003**	**2.3300e-003**	**4.0000e-005**	**2.3700e-003**	**0.0000**	**6.4929**	**6.4929**	**1.9000e-004**	**1.9000e-004**	**6.5548**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5062	0.0000	0.5062	0.2010	0.0000	0.2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1596	1.5369	1.4482	3.4100e-003		0.0622	0.0622		0.0572	0.0572	0.0000	299.7838	299.7838	0.0970	0.0000	302.2077
Total	**0.1596**	**1.5369**	**1.4482**	**3.4100e-003**	**0.5062**	**0.0622**	**0.5684**	**0.2010**	**0.0572**	**0.2582**	**0.0000**	**299.7838**	**299.7838**	**0.0970**	**0.0000**	**302.2077**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2500e-003	2.0900e-003	0.0253	7.0000e-005	8.7600e-003	4.0000e-005	8.8000e-003	2.3300e-003	4.0000e-005	2.3700e-003	0.0000	6.4929	6.4929	1.9000e-004	1.9000e-004	6.5548
Total	**3.2500e-003**	**2.0900e-003**	**0.0253**	**7.0000e-005**	**8.7600e-003**	**4.0000e-005**	**8.8000e-003**	**2.3300e-003**	**4.0000e-005**	**2.3700e-003**	**0.0000**	**6.4929**	**6.4929**	**1.9000e-004**	**1.9000e-004**	**6.5548**

3.4 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0875	0.7981	1.0294	1.7300e-003		0.0338	0.0338		0.0318	0.0318	0.0000	148.4285	148.4285	0.0349	0.0000	149.3007
Total	**0.0875**	**0.7981**	**1.0294**	**1.7300e-003**		**0.0338**	**0.0338**		**0.0318**	**0.0318**	**0.0000**	**148.4285**	**148.4285**	**0.0349**	**0.0000**	**149.3007**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6500e-003	0.0689	0.0200	3.0000e-004	0.0102	4.4000e-004	0.0106	2.9400e-003	4.3000e-004	3.3600e-003	0.0000	28.8773	28.8773	1.3000e-004	4.3300e-003	30.1714
Worker	0.0153	9.8700e-003	0.1191	3.3000e-004	0.0413	1.9000e-004	0.0415	0.0110	1.8000e-004	0.0112	0.0000	30.5994	30.5994	9.1000e-004	9.0000e-004	30.8908
Total	**0.0170**	**0.0788**	**0.1391**	**6.3000e-004**	**0.0515**	**6.3000e-004**	**0.0521**	**0.0139**	**6.1000e-004**	**0.0145**	**0.0000**	**59.4767**	**59.4767**	**1.0400e-003**	**5.2300e-003**	**61.0622**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0875	0.7981	1.0294	1.7300e-003		0.0338	0.0338		0.0318	0.0318	0.0000	148.4283	148.4283	0.0349	0.0000	149.3006
Total	**0.0875**	**0.7981**	**1.0294**	**1.7300e-003**		**0.0338**	**0.0338**		**0.0318**	**0.0318**	**0.0000**	**148.4283**	**148.4283**	**0.0349**	**0.0000**	**149.3006**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6500e-003	0.0689	0.0200	3.0000e-004	0.0102	4.4000e-004	0.0106	2.9400e-003	4.3000e-004	3.3600e-003	0.0000	28.8773	28.8773	1.3000e-004	4.3300e-003	30.1714
Worker	0.0153	9.8700e-003	0.1191	3.3000e-004	0.0413	1.9000e-004	0.0415	0.0110	1.8000e-004	0.0112	0.0000	30.5994	30.5994	9.1000e-004	9.0000e-004	30.8908
Total	**0.0170**	**0.0788**	**0.1391**	**6.3000e-004**	**0.0515**	**6.3000e-004**	**0.0521**	**0.0139**	**6.1000e-004**	**0.0145**	**0.0000**	**59.4767**	**59.4767**	**1.0400e-003**	**5.2300e-003**	**61.0622**

3.4 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.2800e-003	0.1396	0.0402	6.0000e-004	0.0207	9.0000e-004	0.0216	5.9900e-003	8.6000e-004	6.8500e-003	0.0000	57.7971	57.7971	2.5000e-004	8.6600e-003	60.3832
Worker	0.0289	0.0179	0.2263	6.6000e-004	0.0842	3.7000e-004	0.0846	0.0224	3.4000e-004	0.0227	0.0000	60.3144	60.3144	1.6700e-003	1.7100e-003	60.8661
Total	**0.0322**	**0.1575**	**0.2664**	**1.2600e-003**	**0.1049**	**1.2700e-003**	**0.1062**	**0.0284**	**1.2000e-003**	**0.0296**	**0.0000**	**118.1115**	**118.1115**	**1.9200e-003**	**0.0104**	**121.2493**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.2800e-003	0.1396	0.0402	6.0000e-004	0.0207	9.0000e-004	0.0216	5.9900e-003	8.6000e-004	6.8500e-003	0.0000	57.7971	57.7971	2.5000e-004	8.6600e-003	60.3832
Worker	0.0289	0.0179	0.2263	6.6000e-004	0.0842	3.7000e-004	0.0846	0.0224	3.4000e-004	0.0227	0.0000	60.3144	60.3144	1.6700e-003	1.7100e-003	60.8661
Total	**0.0322**	**0.1575**	**0.2664**	**1.2600e-003**	**0.1049**	**1.2700e-003**	**0.1062**	**0.0284**	**1.2000e-003**	**0.0296**	**0.0000**	**118.1115**	**118.1115**	**1.9200e-003**	**0.0104**	**121.2493**

3.4 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.2200e-003	0.1385	0.0396	5.9000e-004	0.0207	9.0000e-004	0.0216	5.9900e-003	8.6000e-004	6.8400e-003	0.0000	56.6317	56.6317	2.5000e-004	8.4700e-003	59.1622
Worker	0.0269	0.0161	0.2113	6.4000e-004	0.0842	3.4000e-004	0.0845	0.0224	3.2000e-004	0.0227	0.0000	58.5197	58.5197	1.5100e-003	1.6100e-003	59.0365
Total	**0.0301**	**0.1546**	**0.2509**	**1.2300e-003**	**0.1049**	**1.2400e-003**	**0.1061**	**0.0284**	**1.1800e-003**	**0.0295**	**0.0000**	**115.1514**	**115.1514**	**1.7600e-003**	**0.0101**	**118.1987**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.2200e-003	0.1385	0.0396	5.9000e-004	0.0207	9.0000e-004	0.0216	5.9900e-003	8.6000e-004	6.8400e-003	0.0000	56.6317	56.6317	2.5000e-004	8.4700e-003	59.1622
Worker	0.0269	0.0161	0.2113	6.4000e-004	0.0842	3.4000e-004	0.0845	0.0224	3.2000e-004	0.0227	0.0000	58.5197	58.5197	1.5100e-003	1.6100e-003	59.0365
Total	**0.0301**	**0.1546**	**0.2509**	**1.2300e-003**	**0.1049**	**1.2400e-003**	**0.1061**	**0.0284**	**1.1800e-003**	**0.0295**	**0.0000**	**115.1514**	**115.1514**	**1.7600e-003**	**0.0101**	**118.1987**

3.4 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1778	1.6211	2.0910	3.5000e-003		0.0686	0.0686		0.0645	0.0645	0.0000	301.4953	301.4953	0.0709	0.0000	303.2671
Total	**0.1778**	**1.6211**	**2.0910**	**3.5000e-003**		**0.0686**	**0.0686**		**0.0645**	**0.0645**	**0.0000**	**301.4953**	**301.4953**	**0.0709**	**0.0000**	**303.2671**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.1600e-003	0.1372	0.0390	5.8000e-004	0.0206	8.9000e-004	0.0215	5.9600e-003	8.5000e-004	6.8100e-003	0.0000	55.3090	55.3090	2.4000e-004	8.2600e-003	57.7770
Worker	0.0249	0.0145	0.1981	6.2000e-004	0.0839	3.2000e-004	0.0842	0.0223	2.9000e-004	0.0226	0.0000	56.6896	56.6896	1.3800e-003	1.5100e-003	57.1754
Total	**0.0281**	**0.1517**	**0.2371**	**1.2000e-003**	**0.1045**	**1.2100e-003**	**0.1057**	**0.0283**	**1.1400e-003**	**0.0294**	**0.0000**	**111.9987**	**111.9987**	**1.6200e-003**	**9.7700e-003**	**114.9523**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1778	1.6211	2.0910	3.5000e-003		0.0686	0.0686		0.0645	0.0645	0.0000	301.4949	301.4949	0.0709	0.0000	303.2667
Total	**0.1778**	**1.6211**	**2.0910**	**3.5000e-003**		**0.0686**	**0.0686**		**0.0645**	**0.0645**	**0.0000**	**301.4949**	**301.4949**	**0.0709**	**0.0000**	**303.2667**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.1600e-003	0.1372	0.0390	5.8000e-004	0.0206	8.9000e-004	0.0215	5.9600e-003	8.5000e-004	6.8100e-003	0.0000	55.3090	55.3090	2.4000e-004	8.2600e-003	57.7770
Worker	0.0249	0.0145	0.1981	6.2000e-004	0.0839	3.2000e-004	0.0842	0.0223	2.9000e-004	0.0226	0.0000	56.6896	56.6896	1.3800e-003	1.5100e-003	57.1754
Total	**0.0281**	**0.1517**	**0.2371**	**1.2000e-003**	**0.1045**	**1.2100e-003**	**0.1057**	**0.0283**	**1.1400e-003**	**0.0294**	**0.0000**	**111.9987**	**111.9987**	**1.6200e-003**	**9.7700e-003**	**114.9523**

3.4 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1367	1.2470	1.6085	2.7000e-003		0.0528	0.0528		0.0496	0.0496	0.0000	231.9195	231.9195	0.0545	0.0000	233.2824
Total	**0.1367**	**1.2470**	**1.6085**	**2.7000e-003**		**0.0528**	**0.0528**		**0.0496**	**0.0496**	**0.0000**	**231.9195**	**231.9195**	**0.0545**	**0.0000**	**233.2824**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3900e-003	0.1048	0.0297	4.3000e-004	0.0159	6.8000e-004	0.0166	4.5900e-003	6.5000e-004	5.2300e-003	0.0000	41.7145	41.7145	1.8000e-004	6.2200e-003	43.5732
Worker	0.0178	0.0102	0.1440	4.6000e-004	0.0645	2.3000e-004	0.0648	0.0172	2.1000e-004	0.0174	0.0000	42.4974	42.4974	9.7000e-004	1.1100e-003	42.8519
Total	**0.0202**	**0.1150**	**0.1738**	**8.9000e-004**	**0.0804**	**9.1000e-004**	**0.0813**	**0.0217**	**8.6000e-004**	**0.0226**	**0.0000**	**84.2119**	**84.2119**	**1.1500e-003**	**7.3300e-003**	**86.4251**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1367	1.2470	1.6085	2.7000e-003		0.0528	0.0528		0.0496	0.0496	0.0000	231.9192	231.9192	0.0545	0.0000	233.2821
Total	**0.1367**	**1.2470**	**1.6085**	**2.7000e-003**		**0.0528**	**0.0528**		**0.0496**	**0.0496**	**0.0000**	**231.9192**	**231.9192**	**0.0545**	**0.0000**	**233.2821**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3900e-003	0.1048	0.0297	4.3000e-004	0.0159	6.8000e-004	0.0166	4.5900e-003	6.5000e-004	5.2300e-003	0.0000	41.7145	41.7145	1.8000e-004	6.2200e-003	43.5732
Worker	0.0178	0.0102	0.1440	4.6000e-004	0.0645	2.3000e-004	0.0648	0.0172	2.1000e-004	0.0174	0.0000	42.4974	42.4974	9.7000e-004	1.1100e-003	42.8519
Total	**0.0202**	**0.1150**	**0.1738**	**8.9000e-004**	**0.0804**	**9.1000e-004**	**0.0813**	**0.0217**	**8.6000e-004**	**0.0226**	**0.0000**	**84.2119**	**84.2119**	**1.1500e-003**	**7.3300e-003**	**86.4251**

3.5 Paving - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0279	0.2617	0.4446	7.0000e-004		0.0128	0.0128		0.0117	0.0117	0.0000	61.0587	61.0587	0.0198	0.0000	61.5524
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0279**	**0.2617**	**0.4446**	**7.0000e-004**		**0.0128**	**0.0128**		**0.0117**	**0.0117**	**0.0000**	**61.0587**	**61.0587**	**0.0198**	**0.0000**	**61.5524**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0100e-003	5.8000e-004	8.1400e-003	3.0000e-005	3.6400e-003	1.0000e-005	3.6600e-003	9.7000e-004	1.0000e-005	9.8000e-004	0.0000	2.4003	2.4003	5.0000e-005	6.0000e-005	2.4203
Total	**1.0100e-003**	**5.8000e-004**	**8.1400e-003**	**3.0000e-005**	**3.6400e-003**	**1.0000e-005**	**3.6600e-003**	**9.7000e-004**	**1.0000e-005**	**9.8000e-004**	**0.0000**	**2.4003**	**2.4003**	**5.0000e-005**	**6.0000e-005**	**2.4203**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0279	0.2617	0.4446	7.0000e-004		0.0128	0.0128		0.0117	0.0117	0.0000	61.0587	61.0587	0.0198	0.0000	61.5524
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0279**	**0.2617**	**0.4446**	**7.0000e-004**		**0.0128**	**0.0128**		**0.0117**	**0.0117**	**0.0000**	**61.0587**	**61.0587**	**0.0198**	**0.0000**	**61.5524**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0100e-003	5.8000e-004	8.1400e-003	3.0000e-005	3.6400e-003	1.0000e-005	3.6600e-003	9.7000e-004	1.0000e-005	9.8000e-004	0.0000	2.4003	2.4003	5.0000e-005	6.0000e-005	2.4203
Total	**1.0100e-003**	**5.8000e-004**	**8.1400e-003**	**3.0000e-005**	**3.6400e-003**	**1.0000e-005**	**3.6600e-003**	**9.7000e-004**	**1.0000e-005**	**9.8000e-004**	**0.0000**	**2.4003**	**2.4003**	**5.0000e-005**	**6.0000e-005**	**2.4203**

3.5 Paving - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.6900e-003	0.0498	0.1110	2.0000e-004		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003	0.0000	16.8697	16.8697	7.9000e-004	0.0000	16.8894
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.6900e-003**	**0.0498**	**0.1110**	**2.0000e-004**		**2.3100e-003**	**2.3100e-003**		**2.3100e-003**	**2.3100e-003**	**0.0000**	**16.8697**	**16.8697**	**7.9000e-004**	**0.0000**	**16.8894**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.2000e-004	1.7800e-003	1.0000e-005	8.4000e-004	0.0000	8.4000e-004	2.2000e-004	0.0000	2.2000e-004	0.0000	0.5380	0.5380	1.0000e-005	1.0000e-005	0.5424
Total	**2.1000e-004**	**1.2000e-004**	**1.7800e-003**	**1.0000e-005**	**8.4000e-004**	**0.0000**	**8.4000e-004**	**2.2000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**0.5380**	**0.5380**	**1.0000e-005**	**1.0000e-005**	**0.5424**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.6900e-003	0.0498	0.1110	2.0000e-004		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003	0.0000	16.8696	16.8696	7.9000e-004	0.0000	16.8894
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.6900e-003**	**0.0498**	**0.1110**	**2.0000e-004**		**2.3100e-003**	**2.3100e-003**		**2.3100e-003**	**2.3100e-003**	**0.0000**	**16.8696**	**16.8696**	**7.9000e-004**	**0.0000**	**16.8894**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.2000e-004	1.7800e-003	1.0000e-005	8.4000e-004	0.0000	8.4000e-004	2.2000e-004	0.0000	2.2000e-004	0.0000	0.5380	0.5380	1.0000e-005	1.0000e-005	0.5424
Total	**2.1000e-004**	**1.2000e-004**	**1.7800e-003**	**1.0000e-005**	**8.4000e-004**	**0.0000**	**8.4000e-004**	**2.2000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**0.5380**	**0.5380**	**1.0000e-005**	**1.0000e-005**	**0.5424**

3.6 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.7844					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9000e-003	0.0321	0.0674	1.1000e-004		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	9.5747	9.5747	3.9000e-004	0.0000	9.5844
Total	**3.7893**	**0.0321**	**0.0674**	**1.1000e-004**		**7.6000e-004**	**7.6000e-004**		**7.6000e-004**	**7.6000e-004**	**0.0000**	**9.5747**	**9.5747**	**3.9000e-004**	**0.0000**	**9.5844**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2300e-003	6.9000e-004	0.0102	3.0000e-005	4.7800e-003	2.0000e-005	4.8000e-003	1.2700e-003	1.0000e-005	1.2900e-003	0.0000	3.0744	3.0744	7.0000e-005	8.0000e-005	3.0995
Total	**1.2300e-003**	**6.9000e-004**	**0.0102**	**3.0000e-005**	**4.7800e-003**	**2.0000e-005**	**4.8000e-003**	**1.2700e-003**	**1.0000e-005**	**1.2900e-003**	**0.0000**	**3.0744**	**3.0744**	**7.0000e-005**	**8.0000e-005**	**3.0995**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.7844					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9000e-003	0.0321	0.0674	1.1000e-004		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	9.5747	9.5747	3.9000e-004	0.0000	9.5844
Total	**3.7893**	**0.0321**	**0.0674**	**1.1000e-004**		**7.6000e-004**	**7.6000e-004**		**7.6000e-004**	**7.6000e-004**	**0.0000**	**9.5747**	**9.5747**	**3.9000e-004**	**0.0000**	**9.5844**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2300e-003	6.9000e-004	0.0102	3.0000e-005	4.7800e-003	2.0000e-005	4.8000e-003	1.2700e-003	1.0000e-005	1.2900e-003	0.0000	3.0744	3.0744	7.0000e-005	8.0000e-005	3.0995
Total	**1.2300e-003**	**6.9000e-004**	**0.0102**	**3.0000e-005**	**4.7800e-003**	**2.0000e-005**	**4.8000e-003**	**1.2700e-003**	**1.0000e-005**	**1.2900e-003**	**0.0000**	**3.0744**	**3.0744**	**7.0000e-005**	**8.0000e-005**	**3.0995**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7910	1.2261	7.5014	0.0185	2.1955	0.0142	2.2097	0.5871	0.0133	0.6004	0.0000	1,706.5533	1,706.5533	0.0840	0.0880	1,734.8701
Unmitigated	0.7910	1.2261	7.5014	0.0185	2.1955	0.0142	2.2097	0.5871	0.0133	0.6004	0.0000	1,706.5533	1,706.5533	0.0840	0.0880	1,734.8701

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	2,114.56	2,136.96	1915.20	5,889,125	5,889,125
Total	2,114.56	2,136.96	1,915.20	5,889,125	5,889,125

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	38.40	22.60	39.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.548891	0.052350	0.169889	0.142795	0.024546	0.006610	0.012173	0.015857	0.000617	0.000465	0.021714	0.001278	0.002815

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	315.3780	315.3780	0.0266	3.2300e-003	317.0050
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	315.3780	315.3780	0.0266	3.2300e-003	317.0050
NaturalGas Mitigated	0.0287	0.2453	0.1044	1.5700e-003		0.0198	0.0198		0.0198	0.0198	0.0000	284.0511	284.0511	5.4400e-003	5.2100e-003	285.7391
NaturalGas Unmitigated	0.0287	0.2453	0.1044	1.5700e-003		0.0198	0.0198		0.0198	0.0198	0.0000	284.0511	284.0511	5.4400e-003	5.2100e-003	285.7391

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	5.32292e+006	0.0287	0.2453	0.1044	1.5700e-003		0.0198	0.0198		0.0198	0.0198	0.0000	284.0511	284.0511	5.4400e-003	5.2100e-003	285.7391
Total		**0.0287**	**0.2453**	**0.1044**	**1.5700e-003**		**0.0198**	**0.0198**		**0.0198**	**0.0198**	**0.0000**	**284.0511**	**284.0511**	**5.4400e-003**	**5.2100e-003**	**285.7391**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	5.32292e+006	0.0287	0.2453	0.1044	1.5700e-003		0.0198	0.0198		0.0198	0.0198	0.0000	284.0511	284.0511	5.4400e-003	5.2100e-003	285.7391
Total		**0.0287**	**0.2453**	**0.1044**	**1.5700e-003**		**0.0198**	**0.0198**		**0.0198**	**0.0198**	**0.0000**	**284.0511**	**284.0511**	**5.4400e-003**	**5.2100e-003**	**285.7391**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.77832e+006	315.3780	0.0266	3.2300e-003	317.0050
Total		**315.3780**	**0.0266**	**3.2300e-003**	**317.0050**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.77832e+006	315.3780	0.0266	3.2300e-003	317.0050
Total		**315.3780**	**0.0266**	**3.2300e-003**	**317.0050**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.0126	0.1029	1.6945	6.2000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	99.7553	99.7553	4.4500e-003	1.7800e-003	100.3967
Unmitigated	2.0126	0.1029	1.6945	6.2000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	99.7553	99.7553	4.4500e-003	1.7800e-003	100.3967

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3784					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5747					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.8100e-003	0.0838	0.0357	5.3000e-004		6.7700e-003	6.7700e-003		6.7700e-003	6.7700e-003	0.0000	97.0385	97.0385	1.8600e-003	1.7800e-003	97.6151
Landscaping	0.0496	0.0191	1.6588	9.0000e-005		9.2200e-003	9.2200e-003		9.2200e-003	9.2200e-003	0.0000	2.7169	2.7169	2.5900e-003	0.0000	2.7816
Total	**2.0126**	**0.1029**	**1.6945**	**6.2000e-004**		**0.0160**	**0.0160**		**0.0160**	**0.0160**	**0.0000**	**99.7553**	**99.7553**	**4.4500e-003**	**1.7800e-003**	**100.3967**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3784					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5747					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.8100e-003	0.0838	0.0357	5.3000e-004		6.7700e-003	6.7700e-003		6.7700e-003	6.7700e-003	0.0000	97.0385	97.0385	1.8600e-003	1.7800e-003	97.6151
Landscaping	0.0496	0.0191	1.6588	9.0000e-005		9.2200e-003	9.2200e-003		9.2200e-003	9.2200e-003	0.0000	2.7169	2.7169	2.5900e-003	0.0000	2.7816
Total	**2.0126**	**0.1029**	**1.6945**	**6.2000e-004**		**0.0160**	**0.0160**		**0.0160**	**0.0160**	**0.0000**	**99.7553**	**99.7553**	**4.4500e-003**	**1.7800e-003**	**100.3967**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	24.3464	0.4772	0.0114	39.6834
Unmitigated	24.3464	0.4772	0.0114	39.6834

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	14.5945 / 9.20088	24.3464	0.4772	0.0114	39.6834
Total		**24.3464**	**0.4772**	**0.0114**	**39.6834**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	14.5945 / 9.20088	24.3464	0.4772	0.0114	39.6834
Total		**24.3464**	**0.4772**	**0.0114**	**39.6834**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	46.8422	2.7683	0.0000	116.0496
Unmitigated	46.8422	2.7683	0.0000	116.0496

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	230.76	46.8422	2.7683	0.0000	116.0496
Total		**46.8422**	**2.7683**	**0.0000**	**116.0496**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	230.76	46.8422	2.7683	0.0000	116.0496
Total		**46.8422**	**2.7683**	**0.0000**	**116.0496**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Part 2

2005 BAU from CalEEMod

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Elliot Subdivision

Tulare County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	224.00	Dwelling Unit	59.13	403,200.00	641

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	51
Climate Zone	7			**Operational Year**	2005
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot Acreage Established

Construction Phase -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	72.73	59.13
tblWoodstoves	NumberCatalytic	59.13	0.00
tblWoodstoves	NumberNoncatalytic	59.13	0.00

2.0 Emissions Summary

Elliot Subdivision - Tulare County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
1999	0.8591	6.6281	3.4041	0.3369	0.7184	0.4782	1.1967	0.3018	0.4782	0.7800	0.0000	237.0562	237.0562	0.0702	0.0000	238.8119
2000	1.6357	9.5558	6.6982	0.0577	0.4462	0.6058	1.0519	0.1443	0.6043	0.7487	0.0000	603.0968	603.0968	0.1294	0.0222	612.9590
2001	1.5174	7.5935	6.1112	0.0479	0.1049	0.5358	0.6407	0.0284	0.5340	0.5623	0.0000	519.9681	519.9681	0.1188	0.0280	531.2921
2002	1.5174	7.5935	6.1112	0.0479	0.1049	0.5358	0.6407	0.0284	0.5340	0.5623	0.0000	519.9681	519.9681	0.1188	0.0280	531.2921
2003	1.5174	7.5935	6.1112	0.0479	0.1049	0.5358	0.6407	0.0284	0.5340	0.5623	0.0000	519.9681	519.9681	0.1188	0.0280	531.2921
2004	5.9296	5.7271	4.0681	0.0348	0.0600	0.3862	0.4462	0.0162	0.3852	0.4014	0.0000	364.3529	364.3529	0.0832	0.0155	371.0393
2005	1.4384	0.0394	0.0420	2.7000e-004	1.0800e-003	3.2900e-003	4.3700e-003	2.9000e-004	3.2900e-003	3.5800e-003	0.0000	3.3795	3.3795	7.1000e-004	1.5000e-004	3.4424
Maximum	**5.9296**	**9.5558**	**6.6982**	**0.3369**	**0.7184**	**0.6058**	**1.1967**	**0.3018**	**0.6043**	**0.7800**	**0.0000**	**603.0968**	**603.0968**	**0.1294**	**0.0280**	**612.9590**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
1999	0.8591	6.6281	3.4041	0.3369	0.7184	0.4782	1.1967	0.3018	0.4782	0.7800	0.0000	237.0559	237.0559	0.0702	0.0000	238.8116
2000	1.6357	9.5558	6.6982	0.0577	0.4462	0.6058	1.0519	0.1443	0.6043	0.7487	0.0000	603.0963	603.0963	0.1294	0.0222	612.9585
2001	1.5174	7.5935	6.1112	0.0479	0.1049	0.5358	0.6407	0.0284	0.5339	0.5623	0.0000	519.9677	519.9677	0.1188	0.0280	531.2917
2002	1.5174	7.5935	6.1112	0.0479	0.1049	0.5358	0.6407	0.0284	0.5339	0.5623	0.0000	519.9677	519.9677	0.1188	0.0280	531.2917
2003	1.5174	7.5935	6.1112	0.0479	0.1049	0.5358	0.6407	0.0284	0.5339	0.5623	0.0000	519.9677	519.9677	0.1188	0.0280	531.2917
2004	5.9296	5.7271	4.0681	0.0348	0.0600	0.3862	0.4462	0.0162	0.3852	0.4014	0.0000	364.3526	364.3526	0.0832	0.0155	371.0390
2005	1.4384	0.0394	0.0420	2.7000e-004	1.0800e-003	3.2900e-003	4.3700e-003	2.9000e-004	3.2900e-003	3.5800e-003	0.0000	3.3795	3.3795	7.1000e-004	1.5000e-004	3.4424
Maximum	**5.9296**	**9.5558**	**6.6982**	**0.3369**	**0.7184**	**0.6058**	**1.1967**	**0.3018**	**0.6043**	**0.7800**	**0.0000**	**603.0963**	**603.0963**	**0.1294**	**0.0280**	**612.9585**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**9-1-1999**	**11-30-1999**	5.1523	5.1523
2	**12-1-1999**	**2-29-2000**	5.2082	5.2082
3	**3-1-2000**	**5-31-2000**	2.9705	2.9705
4	**6-1-2000**	**8-31-2000**	2.2829	2.2829

Elliot Subdivision - Tulare County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5	**9-1-2000**	**11-30-2000**	2.2764	2.2764
6	**12-1-2000**	**2-28-2001**	2.2603	2.2603
7	**3-1-2001**	**5-31-2001**	2.2922	2.2922
8	**6-1-2001**	**8-31-2001**	2.2829	2.2829
9	**9-1-2001**	**11-30-2001**	2.2764	2.2764
10	**12-1-2001**	**2-28-2002**	2.2603	2.2603
11	**3-1-2002**	**5-31-2002**	2.2922	2.2922
12	**6-1-2002**	**8-31-2002**	2.2829	2.2829
13	**9-1-2002**	**11-30-2002**	2.2764	2.2764
14	**12-1-2002**	**2-28-2003**	2.2603	2.2603
15	**3-1-2003**	**5-31-2003**	2.2922	2.2922
16	**6-1-2003**	**8-31-2003**	2.2829	2.2829
17	**9-1-2003**	**11-30-2003**	2.2764	2.2764
18	**12-1-2003**	**2-29-2004**	2.2854	2.2854
19	**3-1-2004**	**5-31-2004**	2.2922	2.2922
20	**6-1-2004**	**8-31-2004**	1.9650	1.9650
21	**9-1-2004**	**11-30-2004**	3.8961	3.8961
22	**12-1-2004**	**2-28-2005**	3.4923	3.4923
		Highest	5.2082	5.2082

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.2987	0.1100	1.9646	6.2000e-004		0.0149	0.0149		0.0149	0.0149	0.0000	99.7553	99.7553	6.2100e-003	1.7800e-003	100.4407
Energy	0.0287	0.2453	0.1044	1.5700e-003		0.0198	0.0198		0.0198	0.0198	0.0000	599.4291	599.4291	0.0321	8.4300e-003	602.7440
Mobile	4.1217	9.8893	48.2416	0.0624	2.2055	0.1809	2.3864	0.5914	0.1716	0.7630	0.0000	2,916.9180	2,916.9180	0.4342	0.3427	3,029.8993
Waste						0.0000	0.0000		0.0000	0.0000	46.8422	0.0000	46.8422	2.7683	0.0000	116.0496
Water						0.0000	0.0000		0.0000	0.0000	4.6302	19.7162	24.3464	0.4772	0.0114	39.6834
Total	**6.4491**	**10.2446**	**50.3105**	**0.0646**	**2.2055**	**0.2156**	**2.4211**	**0.5914**	**0.2064**	**0.7978**	**51.4724**	**3,635.8186**	**3,687.2909**	**3.7180**	**0.3644**	**3,888.8170**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.2987	0.1100	1.9646	6.2000e-004		0.0149	0.0149		0.0149	0.0149	0.0000	99.7553	99.7553	6.2100e-003	1.7800e-003	100.4407
Energy	0.0287	0.2453	0.1044	1.5700e-003		0.0198	0.0198		0.0198	0.0198	0.0000	599.4291	599.4291	0.0321	8.4300e-003	602.7440
Mobile	4.1217	9.8893	48.2416	0.0624	2.2055	0.1809	2.3864	0.5914	0.1716	0.7630	0.0000	2,916.9180	2,916.9180	0.4342	0.3427	3,029.8993
Waste						0.0000	0.0000		0.0000	0.0000	46.8422	0.0000	46.8422	2.7683	0.0000	116.0496
Water						0.0000	0.0000		0.0000	0.0000	4.6302	19.7162	24.3464	0.4772	0.0114	39.6834
Total	**6.4491**	**10.2446**	**50.3105**	**0.0646**	**2.2055**	**0.2156**	**2.4211**	**0.5914**	**0.2064**	**0.7978**	**51.4724**	**3,635.8186**	**3,687.2909**	**3.7180**	**0.3644**	**3,888.8170**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/1/1999	10/26/1999	5	40	
2	Grading	Grading	10/27/1999	3/28/2000	5	110	
3	Building Construction	Building Construction	3/29/2000	6/29/2004	5	1110	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	Paving	Paving	6/30/2004	10/12/2004	5	75	
5	Architectural Coating	Architectural Coating	10/13/2004	1/25/2005	5	75	

Acres of Grading (Site Preparation Phase): 60

Acres of Grading (Grading Phase): 330

Acres of Paving: 0

Residential Indoor: 816,480; Residential Outdoor: 272,160; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	81.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 1999

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3931	0.0000	0.3931	0.2021	0.0000	0.2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3153	2.2990	0.8397	0.1193		0.1779	0.1779		0.1779	0.1779	0.0000	80.0092	80.0092	0.0258	0.0000	80.6535
Total	**0.3153**	**2.2990**	**0.8397**	**0.1193**	**0.3931**	**0.1779**	**0.5711**	**0.2021**	**0.1779**	**0.3800**	**0.0000**	**80.0092**	**80.0092**	**0.0258**	**0.0000**	**80.6535**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 1999

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					2.4800e-003	0.0000	2.4800e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**2.4800e-003**	**0.0000**	**2.4800e-003**	**6.1000e-004**	**0.0000**	**6.1000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3931	0.0000	0.3931	0.2021	0.0000	0.2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3153	2.2990	0.8397	0.1193		0.1779	0.1779		0.1779	0.1779	0.0000	80.0091	80.0091	0.0258	0.0000	80.6534
Total	**0.3153**	**2.2990**	**0.8397**	**0.1193**	**0.3931**	**0.1779**	**0.5711**	**0.2021**	**0.1779**	**0.3800**	**0.0000**	**80.0091**	**80.0091**	**0.0258**	**0.0000**	**80.6534**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 1999

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					2.4800e-003	0.0000	2.4800e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**2.4800e-003**	**0.0000**	**2.4800e-003**	**6.1000e-004**	**0.0000**	**6.1000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Grading - 1999

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3195	0.0000	0.3195	0.0983	0.0000	0.0983	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5438	4.3291	2.5644	0.2176		0.3003	0.3003		0.3003	0.3003	0.0000	157.0469	157.0469	0.0445	0.0000	158.1584
Total	**0.5438**	**4.3291**	**2.5644**	**0.2176**	**0.3195**	**0.3003**	**0.6198**	**0.0983**	**0.3003**	**0.3987**	**0.0000**	**157.0469**	**157.0469**	**0.0445**	**0.0000**	**158.1584**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 1999

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					3.3100e-003	0.0000	3.3100e-003	8.1000e-004	0.0000	8.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**3.3100e-003**	**0.0000**	**3.3100e-003**	**8.1000e-004**	**0.0000**	**8.1000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3195	0.0000	0.3195	0.0983	0.0000	0.0983	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5438	4.3291	2.5644	0.2176		0.3003	0.3003		0.3003	0.3003	0.0000	157.0467	157.0467	0.0445	0.0000	158.1582
Total	**0.5438**	**4.3291**	**2.5644**	**0.2176**	**0.3195**	**0.3003**	**0.6198**	**0.0983**	**0.3003**	**0.3987**	**0.0000**	**157.0467**	**157.0467**	**0.0445**	**0.0000**	**158.1582**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 1999

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					3.3100e-003	0.0000	3.3100e-003	8.1000e-004	0.0000	8.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**3.3100e-003**	**0.0000**	**3.3100e-003**	**8.1000e-004**	**0.0000**	**8.1000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Grading - 2000

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3617	0.0000	0.3617	0.1215	0.0000	0.1215	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4688	3.7744	1.9082	0.0212		0.1991	0.1991		0.1991	0.1991	0.0000	202.8523	202.8523	0.0381	0.0000	203.8051
Total	**0.4688**	**3.7744**	**1.9082**	**0.0212**	**0.3617**	**0.1991**	**0.5607**	**0.1215**	**0.1991**	**0.3206**	**0.0000**	**202.8523**	**202.8523**	**0.0381**	**0.0000**	**203.8051**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2000

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0158	0.0209	0.1540	9.0000e-005	4.9400e-003	2.2000e-004	5.1600e-003	1.3100e-003	2.1000e-004	1.5200e-003	0.0000	5.7860	5.7860	1.2200e-003	9.7000e-004	6.1047
Total	**0.0158**	**0.0209**	**0.1540**	**9.0000e-005**	**4.9400e-003**	**2.2000e-004**	**5.1600e-003**	**1.3100e-003**	**2.1000e-004**	**1.5200e-003**	**0.0000**	**5.7860**	**5.7860**	**1.2200e-003**	**9.7000e-004**	**6.1047**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3617	0.0000	0.3617	0.1215	0.0000	0.1215	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4688	3.7744	1.9082	0.0212		0.1991	0.1991		0.1991	0.1991	0.0000	202.8520	202.8520	0.0381	0.0000	203.8049
Total	**0.4688**	**3.7744**	**1.9082**	**0.0212**	**0.3617**	**0.1991**	**0.5607**	**0.1215**	**0.1991**	**0.3206**	**0.0000**	**202.8520**	**202.8520**	**0.0381**	**0.0000**	**203.8049**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2000

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0158	0.0209	0.1540	9.0000e-005	4.9400e-003	2.2000e-004	5.1600e-003	1.3100e-003	2.1000e-004	1.5200e-003	0.0000	5.7860	5.7860	1.2200e-003	9.7000e-004	6.1047
Total	**0.0158**	**0.0209**	**0.1540**	**9.0000e-005**	**4.9400e-003**	**2.2000e-004**	**5.1600e-003**	**1.3100e-003**	**2.1000e-004**	**1.5200e-003**	**0.0000**	**5.7860**	**5.7860**	**1.2200e-003**	**9.7000e-004**	**6.1047**

3.4 Building Construction - 2000

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.8638	4.7779	2.2135	0.0301		0.3756	0.3756		0.3756	0.3756	0.0000	260.2324	260.2324	0.0704	0.0000	261.9911
Total	**0.8638**	**4.7779**	**2.2135**	**0.0301**		**0.3756**	**0.3756**		**0.3756**	**0.3756**	**0.0000**	**260.2324**	**260.2324**	**0.0704**	**0.0000**	**261.9911**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2000

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0831	0.7127	0.4306	5.0800e-003	0.0157	0.0280	0.0437	4.5400e-003	0.0268	0.0313	0.0000	59.3909	59.3909	3.9700e-003	8.7600e-003	62.1006
Worker	0.2043	0.2699	1.9919	1.1800e-003	0.0639	2.9000e-003	0.0668	0.0170	2.6900e-003	0.0197	0.0000	74.8353	74.8353	0.0158	0.0125	78.9576
Total	**0.2874**	**0.9826**	**2.4225**	**6.2600e-003**	**0.0796**	**0.0309**	**0.1105**	**0.0215**	**0.0294**	**0.0510**	**0.0000**	**134.2262**	**134.2262**	**0.0198**	**0.0213**	**141.0581**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.8638	4.7779	2.2135	0.0301		0.3756	0.3756		0.3756	0.3756	0.0000	260.2321	260.2321	0.0704	0.0000	261.9907
Total	**0.8638**	**4.7779**	**2.2135**	**0.0301**		**0.3756**	**0.3756**		**0.3756**	**0.3756**	**0.0000**	**260.2321**	**260.2321**	**0.0704**	**0.0000**	**261.9907**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2000

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0831	0.7127	0.4306	5.0800e-003	0.0157	0.0280	0.0437	4.5400e-003	0.0268	0.0313	0.0000	59.3909	59.3909	3.9700e-003	8.7600e-003	62.1006
Worker	0.2043	0.2699	1.9919	1.1800e-003	0.0639	2.9000e-003	0.0668	0.0170	2.6900e-003	0.0197	0.0000	74.8353	74.8353	0.0158	0.0125	78.9576
Total	**0.2874**	**0.9826**	**2.4225**	**6.2600e-003**	**0.0796**	**0.0309**	**0.1105**	**0.0215**	**0.0294**	**0.0510**	**0.0000**	**134.2262**	**134.2262**	**0.0198**	**0.0213**	**141.0581**

3.4 Building Construction - 2001

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.1386	6.2982	2.9179	0.0397		0.4951	0.4951		0.4951	0.4951	0.0000	343.0336	343.0336	0.0927	0.0000	345.3518
Total	**1.1386**	**6.2982**	**2.9179**	**0.0397**		**0.4951**	**0.4951**		**0.4951**	**0.4951**	**0.0000**	**343.0336**	**343.0336**	**0.0927**	**0.0000**	**345.3518**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2001

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1095	0.9395	0.5676	6.7000e-003	0.0207	0.0369	0.0576	5.9800e-003	0.0353	0.0413	0.0000	78.2880	78.2880	5.2300e-003	0.0116	81.8599
Worker	0.2693	0.3558	2.6257	1.5600e-003	0.0842	3.8300e-003	0.0880	0.0224	3.5500e-003	0.0259	0.0000	98.6465	98.6465	0.0208	0.0165	104.0804
Total	**0.3788**	**1.2953**	**3.1933**	**8.2600e-003**	**0.1049**	**0.0407**	**0.1456**	**0.0284**	**0.0388**	**0.0672**	**0.0000**	**176.9345**	**176.9345**	**0.0260**	**0.0280**	**185.9403**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.1386	6.2982	2.9178	0.0397		0.4951	0.4951		0.4951	0.4951	0.0000	343.0332	343.0332	0.0927	0.0000	345.3514
Total	**1.1386**	**6.2982**	**2.9178**	**0.0397**		**0.4951**	**0.4951**		**0.4951**	**0.4951**	**0.0000**	**343.0332**	**343.0332**	**0.0927**	**0.0000**	**345.3514**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2001

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1095	0.9395	0.5676	6.7000e-003	0.0207	0.0369	0.0576	5.9800e-003	0.0353	0.0413	0.0000	78.2880	78.2880	5.2300e-003	0.0116	81.8599
Worker	0.2693	0.3558	2.6257	1.5600e-003	0.0842	3.8300e-003	0.0880	0.0224	3.5500e-003	0.0259	0.0000	98.6465	98.6465	0.0208	0.0165	104.0804
Total	**0.3788**	**1.2953**	**3.1933**	**8.2600e-003**	**0.1049**	**0.0407**	**0.1456**	**0.0284**	**0.0388**	**0.0672**	**0.0000**	**176.9345**	**176.9345**	**0.0260**	**0.0280**	**185.9403**

3.4 Building Construction - 2002

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.1386	6.2982	2.9179	0.0397		0.4951	0.4951		0.4951	0.4951	0.0000	343.0336	343.0336	0.0927	0.0000	345.3518
Total	**1.1386**	**6.2982**	**2.9179**	**0.0397**		**0.4951**	**0.4951**		**0.4951**	**0.4951**	**0.0000**	**343.0336**	**343.0336**	**0.0927**	**0.0000**	**345.3518**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2002

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1095	0.9395	0.5676	6.7000e-003	0.0207	0.0369	0.0576	5.9800e-003	0.0353	0.0413	0.0000	78.2880	78.2880	5.2300e-003	0.0116	81.8599
Worker	0.2693	0.3558	2.6257	1.5600e-003	0.0842	3.8300e-003	0.0880	0.0224	3.5500e-003	0.0259	0.0000	98.6465	98.6465	0.0208	0.0165	104.0804
Total	**0.3788**	**1.2953**	**3.1933**	**8.2600e-003**	**0.1049**	**0.0407**	**0.1456**	**0.0284**	**0.0388**	**0.0672**	**0.0000**	**176.9345**	**176.9345**	**0.0260**	**0.0280**	**185.9403**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.1386	6.2982	2.9178	0.0397		0.4951	0.4951		0.4951	0.4951	0.0000	343.0332	343.0332	0.0927	0.0000	345.3514
Total	**1.1386**	**6.2982**	**2.9178**	**0.0397**		**0.4951**	**0.4951**		**0.4951**	**0.4951**	**0.0000**	**343.0332**	**343.0332**	**0.0927**	**0.0000**	**345.3514**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2002

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1095	0.9395	0.5676	6.7000e-003	0.0207	0.0369	0.0576	5.9800e-003	0.0353	0.0413	0.0000	78.2880	78.2880	5.2300e-003	0.0116	81.8599
Worker	0.2693	0.3558	2.6257	1.5600e-003	0.0842	3.8300e-003	0.0880	0.0224	3.5500e-003	0.0259	0.0000	98.6465	98.6465	0.0208	0.0165	104.0804
Total	**0.3788**	**1.2953**	**3.1933**	**8.2600e-003**	**0.1049**	**0.0407**	**0.1456**	**0.0284**	**0.0388**	**0.0672**	**0.0000**	**176.9345**	**176.9345**	**0.0260**	**0.0280**	**185.9403**

3.4 Building Construction - 2003

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.1386	6.2982	2.9179	0.0397		0.4951	0.4951		0.4951	0.4951	0.0000	343.0336	343.0336	0.0927	0.0000	345.3518
Total	**1.1386**	**6.2982**	**2.9179**	**0.0397**		**0.4951**	**0.4951**		**0.4951**	**0.4951**	**0.0000**	**343.0336**	**343.0336**	**0.0927**	**0.0000**	**345.3518**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2003

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1095	0.9395	0.5676	6.7000e-003	0.0207	0.0369	0.0576	5.9800e-003	0.0353	0.0413	0.0000	78.2880	78.2880	5.2300e-003	0.0116	81.8599
Worker	0.2693	0.3558	2.6257	1.5600e-003	0.0842	3.8300e-003	0.0880	0.0224	3.5500e-003	0.0259	0.0000	98.6465	98.6465	0.0208	0.0165	104.0804
Total	**0.3788**	**1.2953**	**3.1933**	**8.2600e-003**	**0.1049**	**0.0407**	**0.1456**	**0.0284**	**0.0388**	**0.0672**	**0.0000**	**176.9345**	**176.9345**	**0.0260**	**0.0280**	**185.9403**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.1386	6.2982	2.9178	0.0397		0.4951	0.4951		0.4951	0.4951	0.0000	343.0332	343.0332	0.0927	0.0000	345.3514
Total	**1.1386**	**6.2982**	**2.9178**	**0.0397**		**0.4951**	**0.4951**		**0.4951**	**0.4951**	**0.0000**	**343.0332**	**343.0332**	**0.0927**	**0.0000**	**345.3514**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2003

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1095	0.9395	0.5676	6.7000e-003	0.0207	0.0369	0.0576	5.9800e-003	0.0353	0.0413	0.0000	78.2880	78.2880	5.2300e-003	0.0116	81.8599
Worker	0.2693	0.3558	2.6257	1.5600e-003	0.0842	3.8300e-003	0.0880	0.0224	3.5500e-003	0.0259	0.0000	98.6465	98.6465	0.0208	0.0165	104.0804
Total	**0.3788**	**1.2953**	**3.1933**	**8.2600e-003**	**0.1049**	**0.0407**	**0.1456**	**0.0284**	**0.0388**	**0.0672**	**0.0000**	**176.9345**	**176.9345**	**0.0260**	**0.0280**	**185.9403**

3.4 Building Construction - 2004

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.5628	3.1129	1.4422	0.0196		0.2447	0.2447		0.2447	0.2447	0.0000	169.5454	169.5454	0.0458	0.0000	170.6911
Total	**0.5628**	**3.1129**	**1.4422**	**0.0196**		**0.2447**	**0.2447**		**0.2447**	**0.2447**	**0.0000**	**169.5454**	**169.5454**	**0.0458**	**0.0000**	**170.6911**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2004

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0541	0.4643	0.2805	3.3100e-003	0.0102	0.0182	0.0285	2.9600e-003	0.0174	0.0204	0.0000	38.6941	38.6941	2.5800e-003	5.7100e-003	40.4595
Worker	0.1331	0.1759	1.2978	7.7000e-004	0.0416	1.8900e-003	0.0435	0.0111	1.7500e-003	0.0128	0.0000	48.7563	48.7563	0.0103	8.1500e-003	51.4421
Total	**0.1872**	**0.6402**	**1.5783**	**4.0800e-003**	**0.0519**	**0.0201**	**0.0720**	**0.0140**	**0.0192**	**0.0332**	**0.0000**	**87.4504**	**87.4504**	**0.0129**	**0.0139**	**91.9015**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.5628	3.1129	1.4422	0.0196		0.2447	0.2447		0.2447	0.2447	0.0000	169.5452	169.5452	0.0458	0.0000	170.6909
Total	**0.5628**	**3.1129**	**1.4422**	**0.0196**		**0.2447**	**0.2447**		**0.2447**	**0.2447**	**0.0000**	**169.5452**	**169.5452**	**0.0458**	**0.0000**	**170.6909**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2004

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0541	0.4643	0.2805	3.3100e-003	0.0102	0.0182	0.0285	2.9600e-003	0.0174	0.0204	0.0000	38.6941	38.6941	2.5800e-003	5.7100e-003	40.4595
Worker	0.1331	0.1759	1.2978	7.7000e-004	0.0416	1.8900e-003	0.0435	0.0111	1.7500e-003	0.0128	0.0000	48.7563	48.7563	0.0103	8.1500e-003	51.4421
Total	**0.1872**	**0.6402**	**1.5783**	**4.0800e-003**	**0.0519**	**0.0201**	**0.0720**	**0.0140**	**0.0192**	**0.0332**	**0.0000**	**87.4504**	**87.4504**	**0.0129**	**0.0139**	**91.9015**

3.5 Paving - 2004

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2505	1.7919	0.7274	0.0101		0.1090	0.1090		0.1090	0.1090	0.0000	90.3732	90.3732	0.0204	0.0000	90.8832
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2505**	**1.7919**	**0.7274**	**0.0101**		**0.1090**	**0.1090**		**0.1090**	**0.1090**	**0.0000**	**90.3732**	**90.3732**	**0.0204**	**0.0000**	**90.8832**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2004

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0143	0.0189	0.1397	8.0000e-005	4.4800e-003	2.0000e-004	4.6800e-003	1.1900e-003	1.9000e-004	1.3800e-003	0.0000	5.2494	5.2494	1.1100e-003	8.8000e-004	5.5386
Total	**0.0143**	**0.0189**	**0.1397**	**8.0000e-005**	**4.4800e-003**	**2.0000e-004**	**4.6800e-003**	**1.1900e-003**	**1.9000e-004**	**1.3800e-003**	**0.0000**	**5.2494**	**5.2494**	**1.1100e-003**	**8.8000e-004**	**5.5386**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2505	1.7919	0.7274	0.0101		0.1090	0.1090		0.1090	0.1090	0.0000	90.3731	90.3731	0.0204	0.0000	90.8831
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2505**	**1.7919**	**0.7274**	**0.0101**		**0.1090**	**0.1090**		**0.1090**	**0.1090**	**0.0000**	**90.3731**	**90.3731**	**0.0204**	**0.0000**	**90.8831**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2004

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0143	0.0189	0.1397	8.0000e-005	4.4800e-003	2.0000e-004	4.6800e-003	1.1900e-003	1.9000e-004	1.3800e-003	0.0000	5.2494	5.2494	1.1100e-003	8.8000e-004	5.5386
Total	**0.0143**	**0.0189**	**0.1397**	**8.0000e-005**	**4.4800e-003**	**2.0000e-004**	**4.6800e-003**	**1.1900e-003**	**1.9000e-004**	**1.3800e-003**	**0.0000**	**5.2494**	**5.2494**	**1.1100e-003**	**8.8000e-004**	**5.5386**

3.6 Architectural Coating - 2004

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.8777					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0254	0.1476	0.0653	8.6000e-004		0.0120	0.0120		0.0120	0.0120	0.0000	7.4045	7.4045	2.0700e-003	0.0000	7.4562
Total	**4.9031**	**0.1476**	**0.0653**	**8.6000e-004**		**0.0120**	**0.0120**		**0.0120**	**0.0120**	**0.0000**	**7.4045**	**7.4045**	**2.0700e-003**	**0.0000**	**7.4562**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2004

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0118	0.0156	0.1153	7.0000e-005	3.7000e-003	1.7000e-004	3.8600e-003	9.8000e-004	1.6000e-004	1.1400e-003	0.0000	4.3302	4.3302	9.1000e-004	7.2000e-004	4.5687
Total	**0.0118**	**0.0156**	**0.1153**	**7.0000e-005**	**3.7000e-003**	**1.7000e-004**	**3.8600e-003**	**9.8000e-004**	**1.6000e-004**	**1.1400e-003**	**0.0000**	**4.3302**	**4.3302**	**9.1000e-004**	**7.2000e-004**	**4.5687**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.8777					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0254	0.1476	0.0653	8.6000e-004		0.0120	0.0120		0.0120	0.0120	0.0000	7.4044	7.4044	2.0700e-003	0.0000	7.4562
Total	**4.9031**	**0.1476**	**0.0653**	**8.6000e-004**		**0.0120**	**0.0120**		**0.0120**	**0.0120**	**0.0000**	**7.4044**	**7.4044**	**2.0700e-003**	**0.0000**	**7.4562**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2004

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0118	0.0156	0.1153	7.0000e-005	3.7000e-003	1.7000e-004	3.8600e-003	9.8000e-004	1.6000e-004	1.1400e-003	0.0000	4.3302	4.3302	9.1000e-004	7.2000e-004	4.5687
Total	**0.0118**	**0.0156**	**0.1153**	**7.0000e-005**	**3.7000e-003**	**1.7000e-004**	**3.8600e-003**	**9.8000e-004**	**1.6000e-004**	**1.1400e-003**	**0.0000**	**4.3302**	**4.3302**	**9.1000e-004**	**7.2000e-004**	**4.5687**

3.6 Architectural Coating - 2005

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.4297					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.3900e-003	0.0364	0.0177	2.5000e-004		3.2600e-003	3.2600e-003		3.2600e-003	3.2600e-003	0.0000	2.1703	2.1703	5.2000e-004	0.0000	2.1834
Total	**1.4361**	**0.0364**	**0.0177**	**2.5000e-004**		**3.2600e-003**	**3.2600e-003**		**3.2600e-003**	**3.2600e-003**	**0.0000**	**2.1703**	**2.1703**	**5.2000e-004**	**0.0000**	**2.1834**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2005

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3900e-003	3.0500e-003	0.0243	1.0000e-005	1.0800e-003	3.0000e-005	1.1100e-003	2.9000e-004	3.0000e-005	3.1000e-004	0.0000	1.2092	1.2092	1.9000e-004	1.5000e-004	1.2591
Total	**2.3900e-003**	**3.0500e-003**	**0.0243**	**1.0000e-005**	**1.0800e-003**	**3.0000e-005**	**1.1100e-003**	**2.9000e-004**	**3.0000e-005**	**3.1000e-004**	**0.0000**	**1.2092**	**1.2092**	**1.9000e-004**	**1.5000e-004**	**1.2591**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.4297					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.3900e-003	0.0364	0.0177	2.5000e-004		3.2600e-003	3.2600e-003		3.2600e-003	3.2600e-003	0.0000	2.1703	2.1703	5.2000e-004	0.0000	2.1833
Total	**1.4361**	**0.0364**	**0.0177**	**2.5000e-004**		**3.2600e-003**	**3.2600e-003**		**3.2600e-003**	**3.2600e-003**	**0.0000**	**2.1703**	**2.1703**	**5.2000e-004**	**0.0000**	**2.1833**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2005

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3900e-003	3.0500e-003	0.0243	1.0000e-005	1.0800e-003	3.0000e-005	1.1100e-003	2.9000e-004	3.0000e-005	3.1000e-004	0.0000	1.2092	1.2092	1.9000e-004	1.5000e-004	1.2591
Total	**2.3900e-003**	**3.0500e-003**	**0.0243**	**1.0000e-005**	**1.0800e-003**	**3.0000e-005**	**1.1100e-003**	**2.9000e-004**	**3.0000e-005**	**3.1000e-004**	**0.0000**	**1.2092**	**1.2092**	**1.9000e-004**	**1.5000e-004**	**1.2591**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.1217	9.8893	48.2416	0.0624	2.2055	0.1809	2.3864	0.5914	0.1716	0.7630	0.0000	2,916.9180	2,916.9180	0.4342	0.3427	3,029.8993
Unmitigated	4.1217	9.8893	48.2416	0.0624	2.2055	0.1809	2.3864	0.5914	0.1716	0.7630	0.0000	2,916.9180	2,916.9180	0.4342	0.3427	3,029.8993

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	2,114.56	2,136.96	1915.20	5,889,125	5,889,125
Total	2,114.56	2,136.96	1,915.20	5,889,125	5,889,125

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	38.40	22.60	39.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.445143	0.090887	0.165130	0.187970	0.045320	0.007055	0.014780	0.012618	0.000711	0.000220	0.019746	0.001150	0.009270

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	315.3780	315.3780	0.0266	3.2300e-003	317.0050
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	315.3780	315.3780	0.0266	3.2300e-003	317.0050
NaturalGas Mitigated	0.0287	0.2453	0.1044	1.5700e-003		0.0198	0.0198		0.0198	0.0198	0.0000	284.0511	284.0511	5.4400e-003	5.2100e-003	285.7391
NaturalGas Unmitigated	0.0287	0.2453	0.1044	1.5700e-003		0.0198	0.0198		0.0198	0.0198	0.0000	284.0511	284.0511	5.4400e-003	5.2100e-003	285.7391

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	5.32292e+006	0.0287	0.2453	0.1044	1.5700e-003		0.0198	0.0198		0.0198	0.0198	0.0000	284.0511	284.0511	5.4400e-003	5.2100e-003	285.7391
Total		**0.0287**	**0.2453**	**0.1044**	**1.5700e-003**		**0.0198**	**0.0198**		**0.0198**	**0.0198**	**0.0000**	**284.0511**	**284.0511**	**5.4400e-003**	**5.2100e-003**	**285.7391**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	5.32292e+006	0.0287	0.2453	0.1044	1.5700e-003		0.0198	0.0198		0.0198	0.0198	0.0000	284.0511	284.0511	5.4400e-003	5.2100e-003	285.7391
Total		**0.0287**	**0.2453**	**0.1044**	**1.5700e-003**		**0.0198**	**0.0198**		**0.0198**	**0.0198**	**0.0000**	**284.0511**	**284.0511**	**5.4400e-003**	**5.2100e-003**	**285.7391**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.77832e+006	315.3780	0.0266	3.2300e-003	317.0050
Total		**315.3780**	**0.0266**	**3.2300e-003**	**317.0050**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.77832e+006	315.3780	0.0266	3.2300e-003	317.0050
Total		**315.3780**	**0.0266**	**3.2300e-003**	**317.0050**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.2987	0.1100	1.9646	6.2000e-004		0.0149	0.0149		0.0149	0.0149	0.0000	99.7553	99.7553	6.2100e-003	1.7800e-003	100.4407
Unmitigated	2.2987	0.1100	1.9646	6.2000e-004		0.0149	0.0149		0.0149	0.0149	0.0000	99.7553	99.7553	6.2100e-003	1.7800e-003	100.4407

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.6307					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5747					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.8100e-003	0.0838	0.0357	5.3000e-004		6.7700e-003	6.7700e-003		6.7700e-003	6.7700e-003	0.0000	97.0385	97.0385	1.8600e-003	1.7800e-003	97.6151
Landscaping	0.0835	0.0262	1.9290	9.0000e-005		8.1500e-003	8.1500e-003		8.1500e-003	8.1500e-003	0.0000	2.7169	2.7169	4.3500e-003	0.0000	2.8256
Total	**2.2987**	**0.1100**	**1.9646**	**6.2000e-004**		**0.0149**	**0.0149**		**0.0149**	**0.0149**	**0.0000**	**99.7553**	**99.7553**	**6.2100e-003**	**1.7800e-003**	**100.4407**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.6307					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5747					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.8100e-003	0.0838	0.0357	5.3000e-004		6.7700e-003	6.7700e-003		6.7700e-003	6.7700e-003	0.0000	97.0385	97.0385	1.8600e-003	1.7800e-003	97.6151
Landscaping	0.0835	0.0262	1.9290	9.0000e-005		8.1500e-003	8.1500e-003		8.1500e-003	8.1500e-003	0.0000	2.7169	2.7169	4.3500e-003	0.0000	2.8256
Total	**2.2987**	**0.1100**	**1.9646**	**6.2000e-004**		**0.0149**	**0.0149**		**0.0149**	**0.0149**	**0.0000**	**99.7553**	**99.7553**	**6.2100e-003**	**1.7800e-003**	**100.4407**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	24.3464	0.4772	0.0114	39.6834
Unmitigated	24.3464	0.4772	0.0114	39.6834

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	14.5945 / 9.20088	24.3464	0.4772	0.0114	39.6834
Total		**24.3464**	**0.4772**	**0.0114**	**39.6834**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	14.5945 / 9.20088	24.3464	0.4772	0.0114	39.6834
Total		**24.3464**	**0.4772**	**0.0114**	**39.6834**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	46.8422	2.7683	0.0000	116.0496
Unmitigated	46.8422	2.7683	0.0000	116.0496

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	230.76	46.8422	2.7683	0.0000	116.0496
Total		**46.8422**	**2.7683**	**0.0000**	**116.0496**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	230.76	46.8422	2.7683	0.0000	116.0496
Total		**46.8422**	**2.7683**	**0.0000**	**116.0496**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B

Biological Evaluation

Corporate Headquarters
1322 E. Shaw Avenue, Suite 400 Fresno, CA, 93710
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Biological Resources Assessment

Elliot Housing Subdivision Project
Assessor Parcel Numbers 087-010-006 and 087-010-008
Visalia, CA



Prepared for

4CREEKS
324 South Santa Fe Street, Suite A
Visalia, CA 93292

Prepared by

1322 E Shaw, Suite 400
Fresno, CA 93710

November 3, 2023

Executive Summary

4Creeks, Inc. (4Creeks) has tasked Soar Environmental Consulting Inc. (Soar Environmental) to provide a Biological Resource Assessment (BRA) as part of an Initial Study, for a Housing Subdivision Development Project (Project) in the City of Visalia, (City) in accordance with the California Environmental Quality Act (CEQA) prior to implementation of the proposed Project. The proposed Project is to construct 224 housing units on 59.13 acres of land on Assessor Parcel Numbers (APN) 087-010-006, and 087-010-008. These parcels are comprised of fallow agricultural fields on the outskirts of the city.

The objectives of this assessment are to: 1) provide a general characterization of biological resources on the property; 2) inventory plant and wildlife species; 3) evaluate the potential for special-status plant and animal species to occur or be impacted by project activities; and 4) describe the property's sensitive biological resources.

This BRA provides information concerning the biological resources within the Project Area. Prior to conducting a Habitat Assessment site survey, Soar Environmental researched the California Natural Diversity Database (CNDDB) and the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC), and the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California, to compile a list of special-status species that could potentially be present in the vicinity of the Project Area. Suitable habitat requirements for the species identified in the records search were reviewed by a Soar Environmental biologist, including species listing status, and proximal observations of special-status plant and wildlife species identified in this report.

No special-status plant or wildlife species were observed in the Project Area during the Habitat Assessment survey. However, based on suitable habitat present, and proximity of documented occurrences of special-status species from the data records search and Literature Review section of this report, it was determined that there is potential for Swainson's hawk (*Buteo swainsoni*) to occur within the vicinity of the Project Area. Based on the findings of this assessment, the proposed development of this property may affect but is unlikely to adversely affect Swainson's hawk, or any other listed species identified in this report . Mitigation measures are listed in Section 6 of this report to further minimize the potential for adverse effects to listed species, and their habitats.

Contents

Executive Summary 2
1. Introduction 5
1.1 Project Location 6
1.2 Project Description 8
1.3 Environmental Setting 9
2. Methods 13
2.1 Literature Review 13
2.2 Field Reconnaissance Methodology 13
3. Biological Assessment Results 14
4. Special-Status Species 18
Species with High Potential for Occurrence: 18
4.1 Special-Status Species Descriptions 27
California tiger salamander (*Amystoma californiense*) 27
Western spadefoot (*Spea hammondii*) 27
Swainson's hawk (*Buteo swainsoni*) 28
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) 28
San Joaquin kit fox (*Vulpes macrotis mutica*) 29
Western mastiff bat (*Eumops perotis californicus*) and Pallid bat (*Antrozous pallidus*) 29
Western pond turtle (*Actinemys marmorata*) 30
Special-Status Plant Species 30
California Jewelflower 30
Ewan's Larkspur 31
Heartscale 31
Lesser Saltscale 31
Subtle Orache 31
Recurved Larkspur 31
4. Findings 32
Critical Habitats 32
Project Impacts 32

Conclusion 32
5. Recommended Mitigation Measures 33
MIitigation Measure 1: Swainson's Hawk Nesting Habitat 33
MIitigation Measure 1a: Nesting Bird Survey 33
MIitigation Measure 1b: Active Nests or Roosts 33
MIitigation Measure 1c: Project Delay 33
6. Study Limitations 33
Works Cited 34

Figures and Diagram

Figure 1. Project Location 7
Diagram A. Site Plan 8
Figure 2. Project Area Boundary 10
Figure 3. Soil Types Occurring in The Project Area 11
Figure 4. USFWS National Wetlands Inventory (NWI) Map 12
Figure 5 – Current and Historical Special-Status Species Locations 17

Tables

Table 1– Wildlife Species Observed on the Project Area 15
Table 2 – Plant Species Observed on the Project Area 15
Table 3 – Regionally Occurring Special-Status Wildlife Species 19
Table 4 – Regionally Occurring Special-Status Plant Species 24

Appendices

APPENDIX A: Project Area Photographs 35
APPENDIX B: U.S. Fish & Wildlife Service IPaC Resource List 43
APPENDIX C: California Department of Fish and Wildlife RareFind 44
APPENDIX D: California Native Plant Society Rare Plant Inventory 45
APPENDIX E: USDA-NRCS Soil Survey ..... Error! Bookmark not defined.
APPENDIX F: Site Plan 47

1. Introduction

The proposed Project is the construction of a housing development on 59.13 acres within the City of Visalia, California. Soar Environmental Consulting Inc. (Soar Environmental) is tasked with providing this Biological Resource Assessment (BRA) in accordance with CEQA requirements.

This Biological Resource Assessment presents the findings of our literature review (including scientific literature and previous reports detailing studies conducted in the area) and the California Department of Fish and Wildlife's (CDFW) Natural Diversity Data Base (CNDDB), the California Native Plant Society (CNPS) online electronic inventory of rare and endangered plants of California, and the U.S. Fish and Wildlife Service (USFWS) IPaC for reported occurrences of special status vegetation communities, plants and animals. Based on a review of these resources it was determined that a Biological Assessment was necessary to search for the potential suitable habitat or presence for the following special-status species:

Special-Status Wildlife Species

- California tiger salamander (*Ambystoma californiense*)
- Western Spadefoot toad (*Spea hammondii*)
- Loggerhead Shrike (*Lanius ludovicianus*)
- Swainson's hawk (*Buteo swainsoni*)
- Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)
- San Joaquin Kit Fox (*Vulpes macrotis mutica*)
- Western Mastiff Bat (*Eumops perotis californicus*)
- Western Pond Turtle (*Actinemys marmorata*)

Special-Status Plant Species

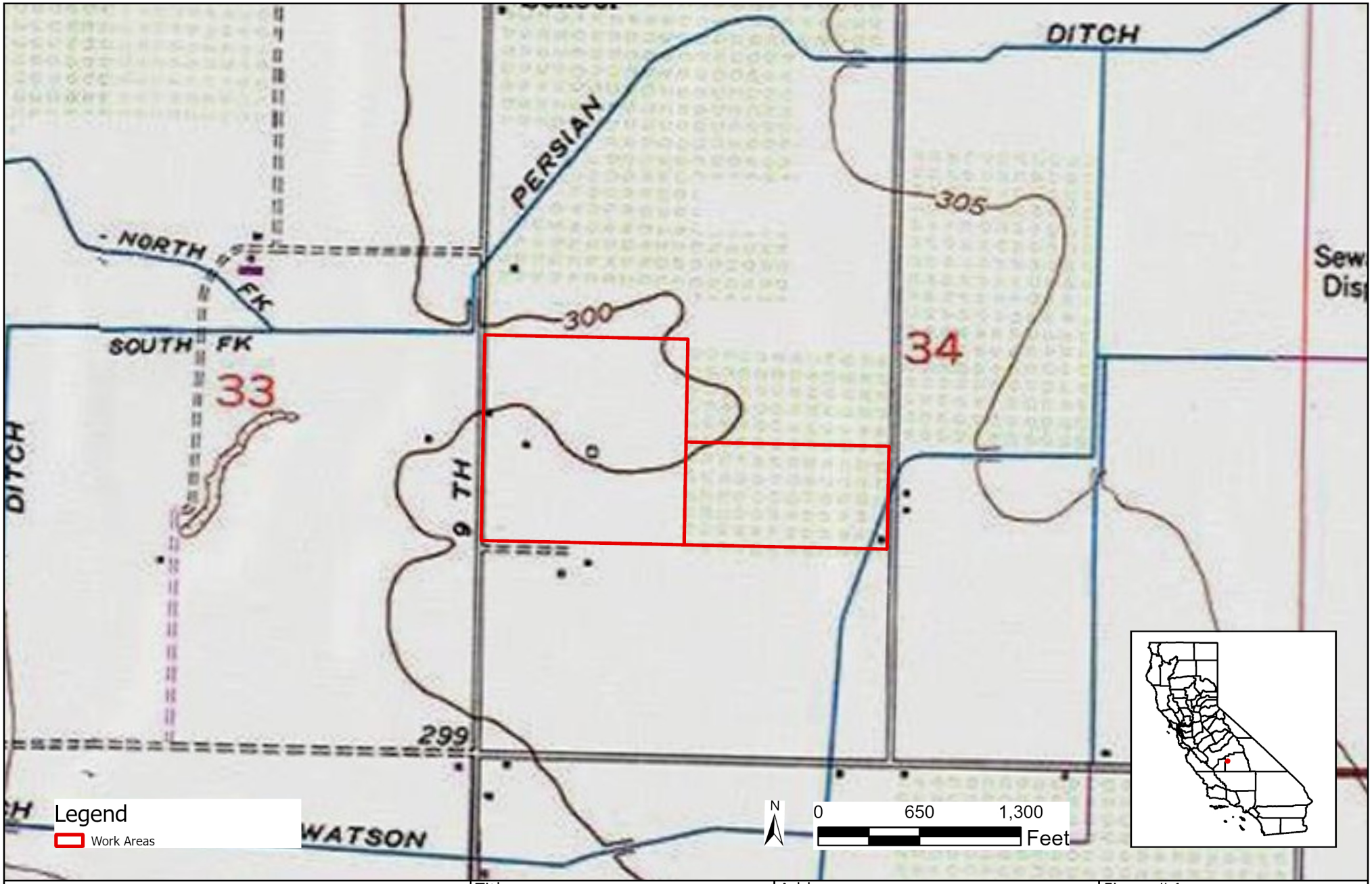
- California Jewelflower (*Caulanthus californicus*)
- Ewan's Larkspur (*Delphinium hansen*ii ssp. *ewanianum*)
- Heartscale (*Atriplex cordulata* var. *cordulata*)
- Lesser Saltscale (*Atriplex minuscula*)
- Recurved Larkspur (*Delphinium recurvatum*)
- Subtle Orache (*Atriplex subtilis*)

A Habitat Assessment was conducted in the Project Area on October 13, 2023, by a Soar Environmental qualified biologist. The purpose of the Biological Assessment survey was to search for the suitable habitat conditions, or presence of special-status species that have historically been observed within, or surrounding, the Project Area, as well as any other biological or environmentally sensitive resources. The Project Area is mostly fallow agricultural fields, with approximately 5.6 acres of valley oak woodland and 4.4 acres of maintained annual grassland habitat in the northwestern section of the property. No special-status species were observed during the site visit, and no wetlands, seasonal wetlands, alkali grassland or shrubland occur in the Project Area.

1.1 Project Location

The Project Area is located in the Central Valley of California on the east side of Road 92 (Shirk Road), approximately 0.5 mile south of State Route (SR) 198 in the City of Visalia, California, Tulare County and is comprised of Assessor Parcel Numbers (APN) 087-010-006 and 807-010-008. The Project Area is in the southwestern quadrant of the city limits, approximately 2.5 miles east of SR-99 and a mile south of SR-198, between Road 92 (Shirk Road) and Roeben St.

Located in the USGS 7.5-minute quadrangle of *Visalia* in Township 18 South, Range 24 East, in the western half of Section 34. The Saint Johns River is approximately 4.5 miles northeast of the Project Area, and the Valley Oaks Golf Course is approximately 1.3 miles west. The Project Area is surrounded by residential houses and agricultural land.



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Title
Four Creeks Elliot Housing Subdivision Project, Visalia, CA

Client
4Creeks

Address
Subdivision Bounded by Shirk and Tulare roads and Roeben Street. APNs 087-010-006, 087-010-008.

Figure # 1
Project Location

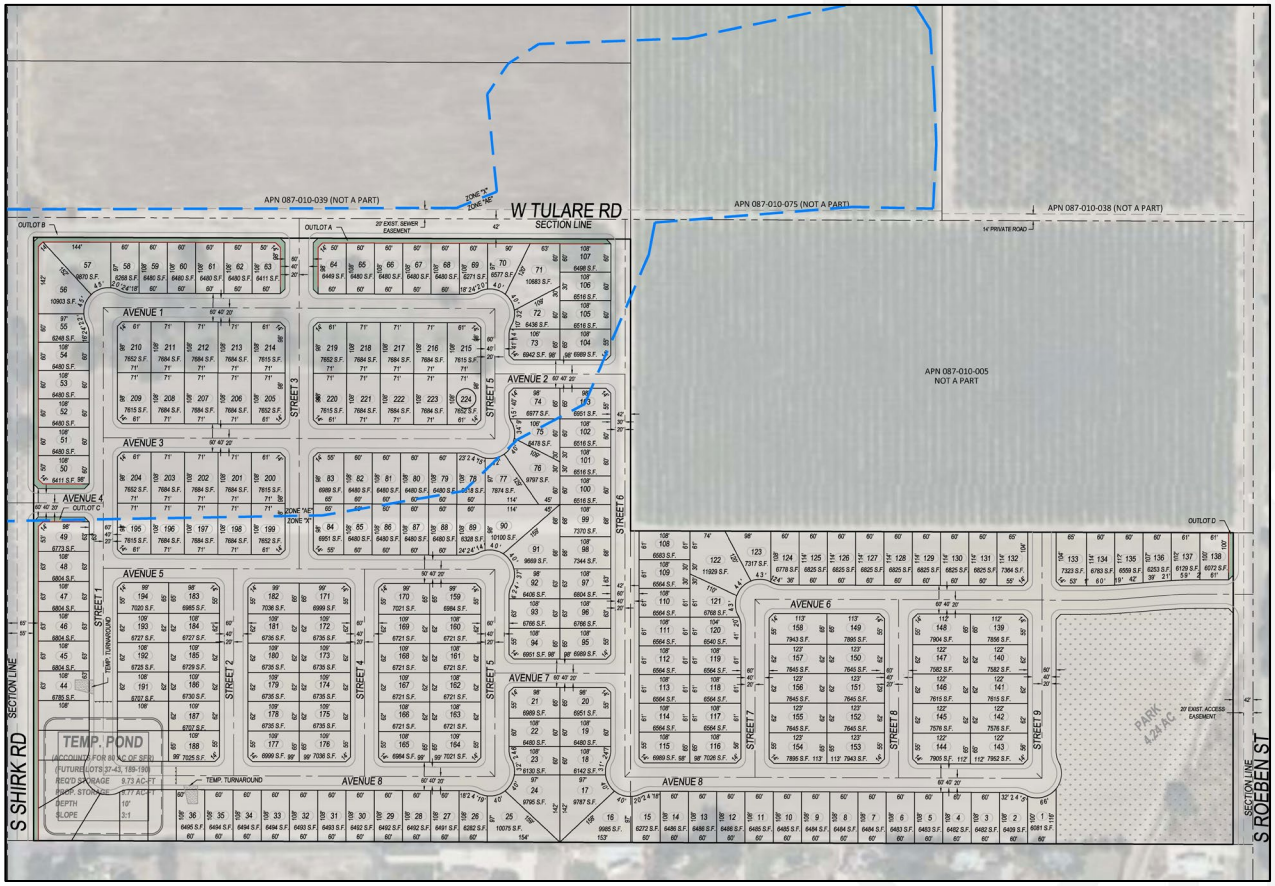
Revision Date
10/23/2023

1.2 Project Description

The proposed Project is the construction of a 224 unit housing subdivision at the southeast corner of Tulare Avenue and Shirk Road, in the City of Visalia. The Project Area is limited to a 59.13-acre property, with 2.24 acres allocated to the development of a park dedicated to the City. Grading will be accomplished using a backhoe and grader.

The project will require the development of roads and sidewalks around and throughout the property. A stormwater retention basin will be maintained in the southwest corner of the Project Area for all on site drainage. On the east side of the property bounded by Roeben Street, three existing overhead powerlines will be undergrounded, and five powerline poles on the Shirk Road boundary will be relocated. Since the entire property will be graded for the housing project during construction activities, the trees in the northwest section of the property would be removed. The majority of the property has been used for agricultural production and the entire lot has been cleared and maintained aside from the trees. (**Diagram A– Site Plan**)

Diagram A Site Plan



A detailed development plan is shown in Appendix F

1.3 Environmental Setting

The Project Area is surrounded by mostly grassy fields to the north and west, and residential complexes to the east and south. This area is on the southeastern side of Visalia in the Central Valley near the Sierra Nevada foothills. The property was being used for growing corn earlier in the year and significant portions of the property were disced prior to the biological survey.

The Project Area is a 59.13-acre disturbed vacant field, composed primarily of non-native annual herbs and grasses. A well- established canal exists along the southeastern boundary. The topography is relatively flat, ranging from 305 feet above sea level to the east, sloping down to 301 feet above sea level to the west (0 to 2% slopes). According to the USDA-NRCS Soil Survey (**Appendix E**) the active agricultural field portion of the Project Area is 101 Akers-Akers saline-sodic complex, and the northwestern portion of the property is mapped as 130 Nord fine sandy loam.

On the northwestern portion of the property there are some tree groves covering 5.6 acres, comprised of approximately 30 valley oaks *(Quercus lobata).* The largest valley oak tree in this stand is approximately 30 inches in diameter at breast height (dbh), the rest are approximately 12 to 24 inch dbh. No bird nests were observed in any of the trees in the Project Area. Another large valley oak that is a multi-trunked tree that is greater than 36” dbh occurs in the middle of the property on the southern edge.



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Figure #2
Project Boundary

Revision Date
10/23/2023

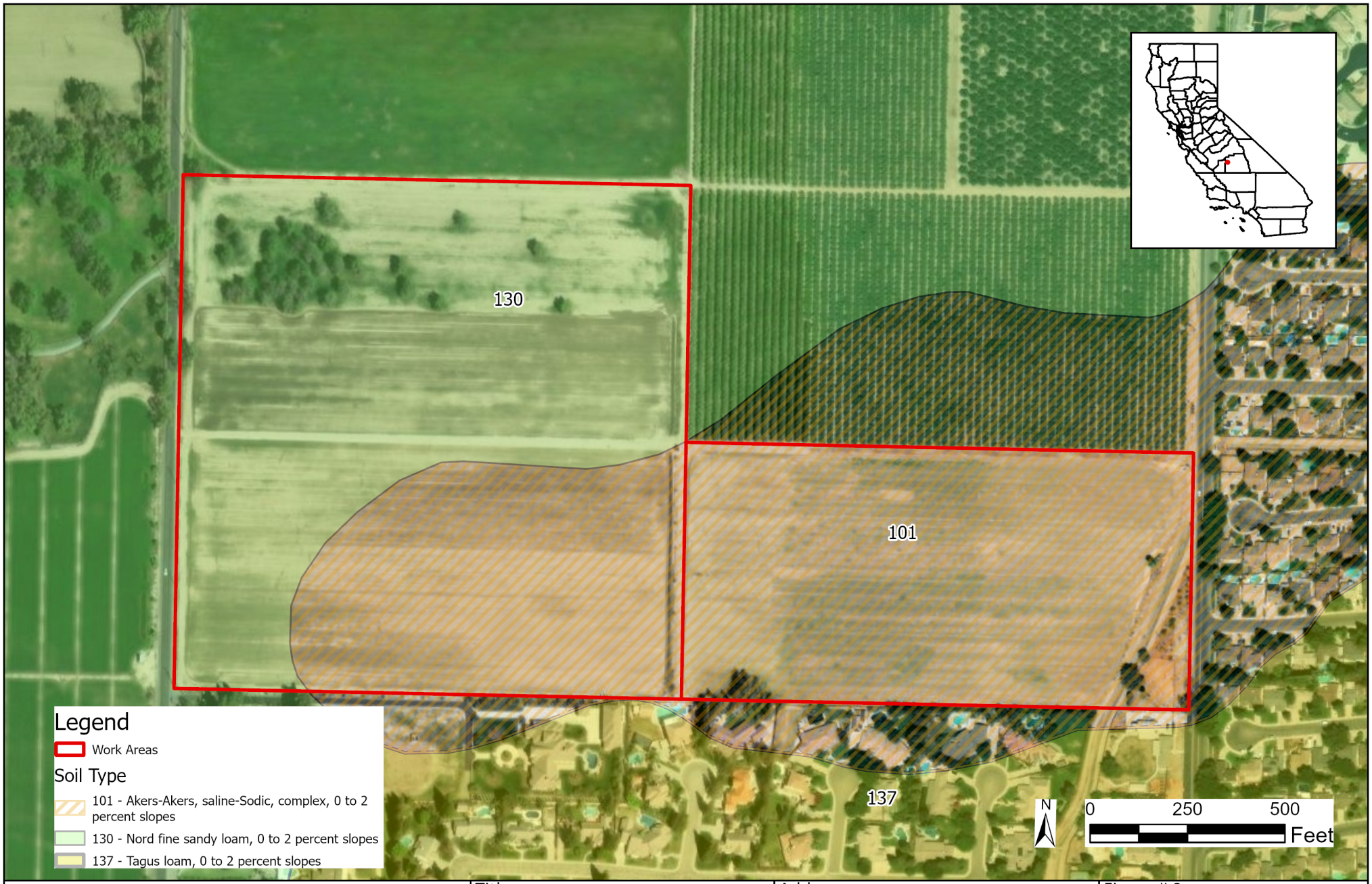

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Figure # 3
Soil Types Occurring in the Project Area

Revision Date
10/23/2023

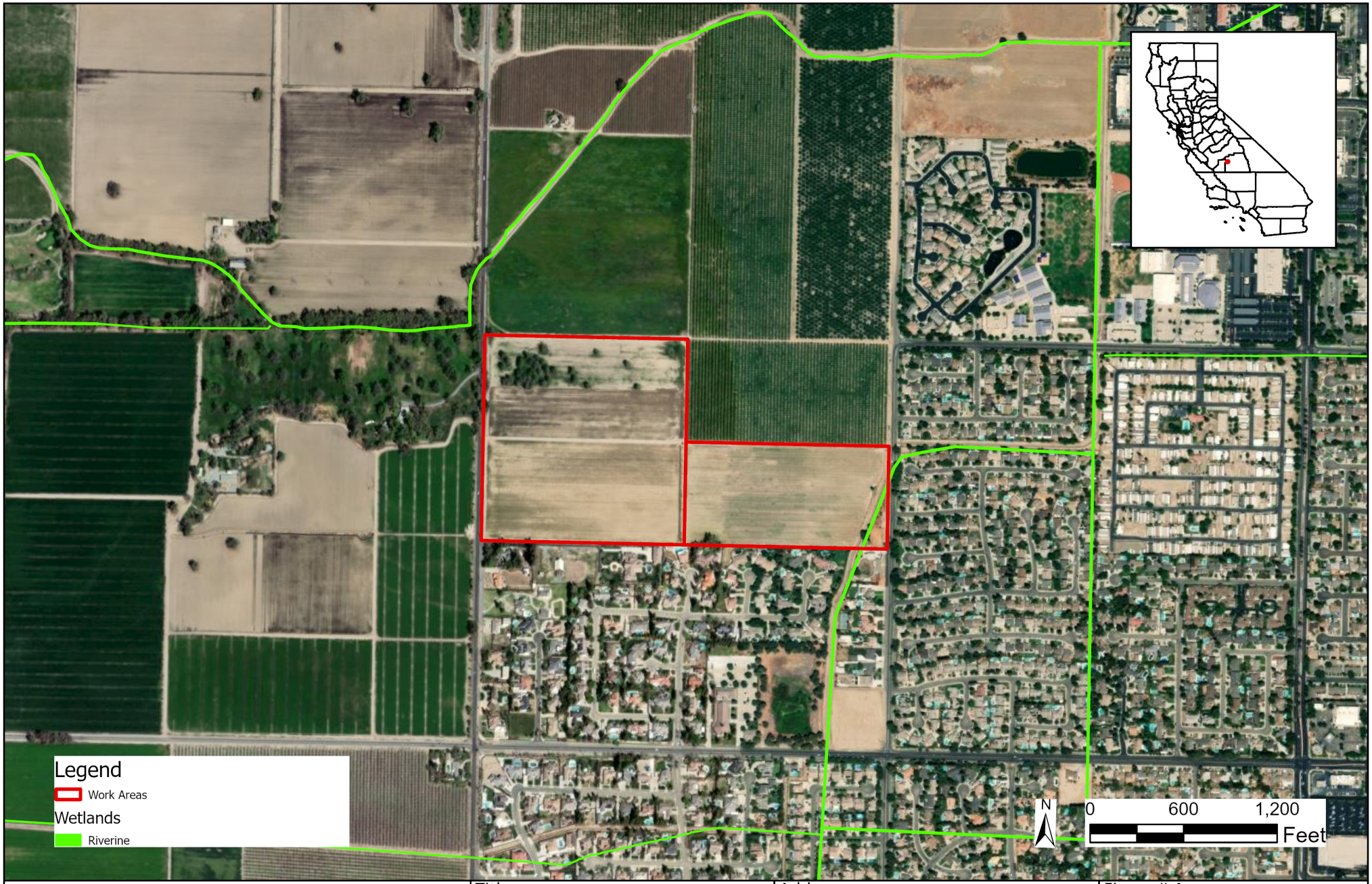

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Figure # 4
USFWS NWI Map

Revision Date
10/23/2023

2. Methods

2.1 Literature Review

Prior to performing the Biological Assessment, Soar Environmental conducted soil survey analysis (**Appendix E**) a survey of the USFWS National Wetlands Inventory (**Figure 4**) and a CNDDB records search (**Figure 5**) for threatened or endangered species that could potentially occur in the vicinity of the Project Area. The records search included a review of the California Natural Diversity Database (CNDDB), the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC), and the California Native Plant Society (CNPS) Online Rare Plant Inventory. The area covered by the data records search included the USGS 7.5-minute quadrangles of *Visalia, Exeter, Goshen, Ivanhoe, Monson, Cairns Corner, Paige, Traver* and *Tulare*. From these sources a list of special-status plant and animal species was generated. Proximal locations of known special-status plant and animal species located within 5 miles of the Project Area are shown in **Figure 5**.

A records search of the CNDDB and IPaC databases indicated 10 special-status wildlife species most likely to occur within or near the Project Area would include:

1) California tiger salamander (*Ambystoma californiense*)
2) Western Spadefoot toad (*Spea hammondii*)
3) Loggerhead Shrike (*Lanius ludovicianus*)
4) Swainson's hawk (*Buteo swainsoni*)
5) Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)
6) San Joaquin Kit Fox (*Vulpes macrotis mutica*)
7) Western Mastiff Bat (*Eumops perotis californicus*)
8) Western Pond Turtle (*Actinemys marmorata*)

A search of the CNPS Online Rare Plant Inventory identified 21 regionally occurring special-status plant species with potential to occur within or near the Project Area. Of these, 6 plant species were determined to have a low potential to occur within portions of the Project Area. The 15 other species determined to have no potential to occur in the Project Area were excluded from further analysis.

1) California Jewelflower (*Caulanthus californicus*)
2) Ewan's Larkspur (*Delphinium hansen*ii ssp. ewanianum)
3) Heartscale (*Atriplex cordulata* var. cordulata)
4) Lesser Saltscale (*Atriplex miniscula*)
5) Recurved Larkspur (*Delphinium recurvatum*)
6) Subtle Orache (*Atriplex subtilis*)

2.2 Field Reconnaissance Methodology

The Habitat Assessment is a diurnal, non-protocol survey. The purpose of the Habitat Assessment Survey was to search for the presence of special-status species or suitable habitat for special-status

species identified in the data records search. The site visit for the Habitat Assessment includes observation and noting the plant and wildlife species occurring on and around the Project Area, habitat suitability for the species named in the **Literature Review**, present environmental conditions, and habitat, including microhabitat (only observable from the ground level).

The Habitat Assessment was conducted on October 13, 2023, by Soar Biologist Ben Arax to assess habitat quality for species listed in Section 2.1. Survey efforts emphasized the search for suitable habitats, or presence of special-status species that had documented occurrences in the data records search of the CNDDB, IPaC, and CNPS databases. The site visit consists of walking the perimeter of the property and meandering transects throughout the Project Area. During the site visit, the surveyor identified vegetation, searched for bird nests, possible small mammal dens, vernal pools and other signs of wildlife occupancy or associated suitable habitats. Plants were surveyed during the late blooming period or surveyed outside the blooming period. The biologist also surveyed the surrounding area by vehicle in accessible areas within 0.5 miles of the Project Area to look for biological resources and features that may be conducive for suitable habitat of the identified special-status species. During the survey, the biologist collected photos of the Project boundaries and other points of interest depicting the habitat and potential biological resources (**Appendix A**).

3. Biological Assessment Results

During the site visit, there were no observations of special-status plant or wildlife species. Plant and wildlife species that were observed on the property are listed in **Tables 1 & 2**. Approximately 49 acres of the Project Area is a bare dirt active agricultural field dominated in places by non-native annual grasses or ruderal weeds. Corn was grown on the property this year. Approximately five acres of low-mowed grassland adjoined by 5.6 acres of oak woodland with approximately 22 trees are on the northwestern edge. No bird nests were observed in the trees, grass thickets or powerline poles in the surrounding area. Herbaceous cover in the understory of the oak trees is dominated by absent to dense grass cover and few small mammal burrows were observed. The ground is relatively flat and cleared to the surface.

The survey was conducted by a qualified biologist outside of the blooming period for most of the sensitive plant species listed in the Literature Review. However, no special-status plant species were observed within or in the vicinity of the Project Area, and conditions for these species do not appear to be conducive, due to active agriculture uses and fire abatement activities including annual disking activities on the property, and in the surrounding urbanized environment.

No special-status plant or wildlife species were observed during the site visit. However, the Soar Biologist observed some common bird species flying around the area, listed in Table 1 below, along with plant species observed onsite. No other wildlife species were observed during the Biological Assessment.

Table 1– Wildlife Species Observed on the Project Area

Wildlife Species	Listing Status
American crow (*Corvus Brachyrynchos*)	None
Black Phoebe (*Sayornis nigricans*)	None
European Starling (*Sturnus vulgaris*)	None
House Finch (*Carpodacus mexicanus*)	MBTA
House Sparrow (*Passer domesticus*)	MBTA
Killdeer (*Charadrius montanus*)	MBTA
Lesser Goldfinch (*Carduelis psaltria*)	MBTA
Mourning dove (*Zenaida macroura*)	MBTA
Northern Flicker (*Colaptes auratus*)	None

Wildlife Species	Listing Status
Northern Mockingbird (*Mimus polyglottos*)	MBTA
Nuttall's Woodpecker (*Picoides nuttallii*)	None
Orange-crowned Warbler (*Vermivora celata*)	MBTA
Red-breasted Nuthatch (*Sitta canadensis*)	MBTA
Red-Tail Hawk (*Buteo jamaicensis*)	MBTA
Western Scrub Jay (*Aphelocoma californica*)	None
White-crowned Sparrow (*Zonotrichia leucophrys*)	MBTA
Yellow-rumped Warbler (*Dendroica coronata*)	MBTA

Table 2 – Plant Species Observed on the Project Area

Plant Species	Listing Status
Tree of Heaven (*Ailanthus altissima*)	Non-native
Tumbleweed (*Amaranthus albus*)	Non-native
Prostrate Pigweed (*Amaranthus blitoides*)	Non-native
Wild Oats (*Avena barbata*)	Non-native
Ripgut Brome (*Bromus diandrus*)	Non-native
Shepherd's Purse (*Capsella bursa-pastoris*)	Non-native
Lambsquarters (*Chenopodium album*)	Non-native

Plant Species	Listing Status
Mexican Sprangletop (*Leptochloa fusca* ssp. *uninervia*)	Native
Common knotgrass (*Polygonum aviculare*)	None
Cheeseweed (*Malva neglecta*)	Non-native
Bur clover (*Medicago polymorpha*)	Non-native
Forget me Not (*Myosotis discolor*)	Non-native
Wild Rice (*Zizania palustris*)	
Dallis Grass (*Paspalum dilatatum*)	Non-native

Bindweed (*Convolvulus arvensis*)	Non-native
Willowherb (*Epilobium brachycarpum*)	Native
Fireweed (*Epilobium ciliatum*)	Native
Fig tree (*Ficus* sp.)	Ornamental
Flax-leaved Horseweed (*Erigeron bonariensis*)	Non-native
Canadian horseweed (*Erigeron canadensis*)	Non-native
English Ivy (*Hedera helix*)	Invasive non-native
Prickly Lettuce (*Lactuca serriola*)	Non-native

Common plantain (*Plantago major*)	Non-native
knotweed (*Polygonum aviculare*)	None
Valley Oak (*Quercus lobata*)	Native
Sow Thistle (*Sonchus oleraceus*)	Non-native
Johnson Grass (*Sorghum halapense*)	None
Puncture Vine (*Tribulus terrestris*)	Non-native
Creeping clover (*Trifolium repens*)	Non-native
Corn (*Zea mays*)	Cultivated

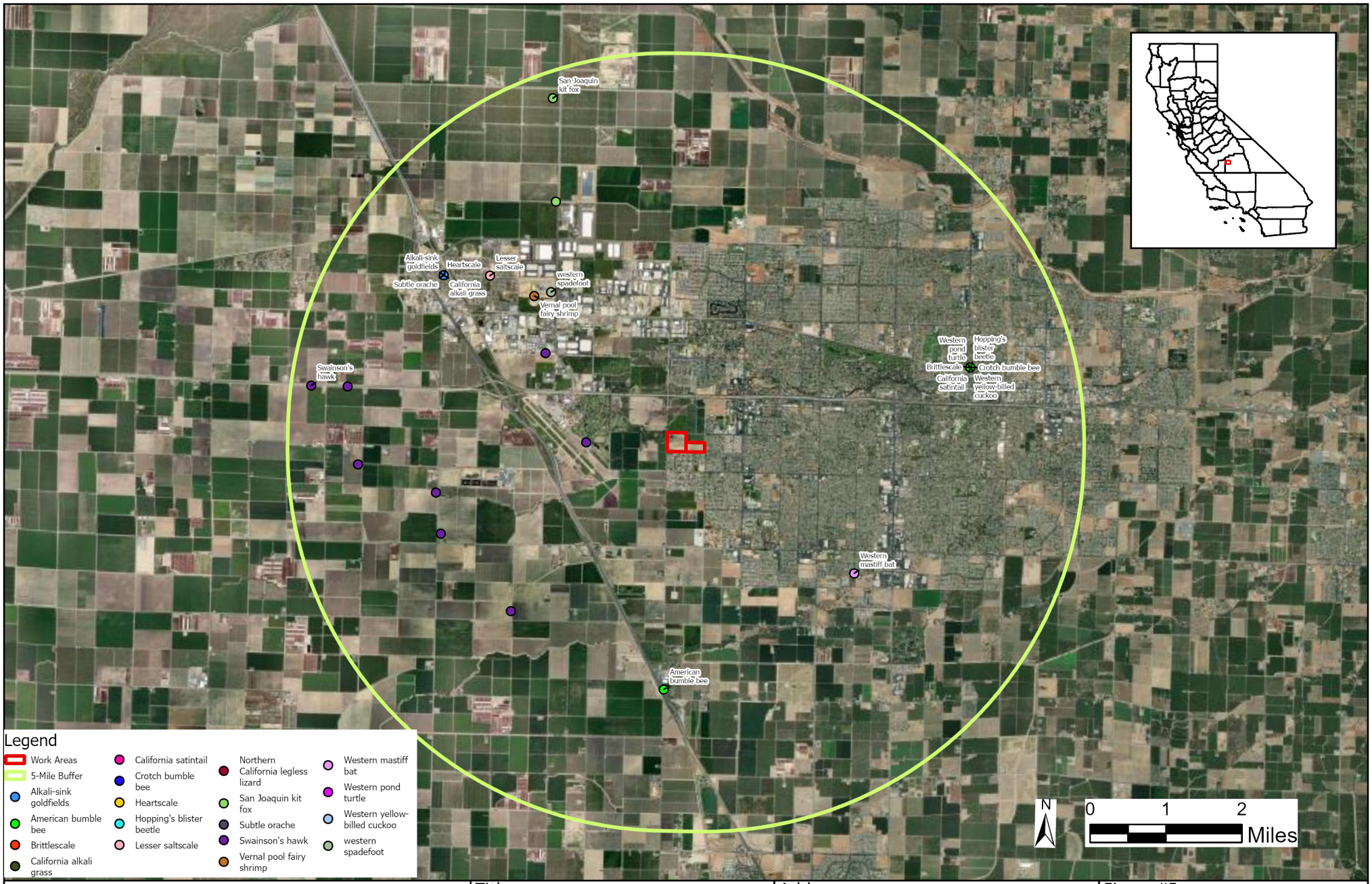

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Figure #5
CNDDB Map

Revision Date
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4. Special-Status Species

Special-status plants and animals that have a reasonable possibility to occur in the Project Area based on habitat suitability and requirements, elevation and geographic range, soils, topography, surrounding land uses, and/or proximity of known occurrences in the CNDDB, IPaC, and CNPS databases to the Project Area are listed in Tables 3 & 4. The likelihood for occurrence of special-status species was assessed using information from the various sources listed in Section 2.1, as well as the Habitat Assessment field survey. Narratives are supplied for species for which there are land use planning and regulatory implications.

Results from the data records search identified 46 special-status species: 25 wildlife and 21 plant species. However, an analysis of recent occurrences, habitat suitability and proximity within 5-miles to the Project Area indicated one special-status wildlife species with high potential to occur and 18 special-status species (12 wildlife species and 6 plant species) with low potential for occurrence. Special-status species for which there are no regulatory implications (i.e., lack of suitable habitat, or no record of historical occurrences within 5 miles) are excluded from further analysis.

Species with High Potential for Occurrence:

- Swainson's Hawk (*Buteo swainsonii*)

Special-status species and sensitive habitats include plant and wildlife taxa, or other unique biological features afforded special protection by local land use policies, and/or state and federal regulations. Special-status plant and animal species are those listed as rare, threatened, or endangered under the state or federal Endangered Species Acts or those who are rare enough to become listed in the foreseeable future (Cal. Code Regs. tit. 14 § 15380). Vegetation communities may warrant special status if they are of limited distribution, have high wildlife value, or are particularly vulnerable to disturbance. Listed and special-status species are defined as:

- Listed or proposed for listing under the state or Federal Endangered Species acts.
- Protected under other regulations (e.g., Migratory Bird Treaty Act).
- California Department of Fish & Wildlife (CDFW) Species of Special Concern.
- Listed as species of concern by CNPS or USFWS; and/or
- Receive consideration during environmental review under CEQA.

All species from the Section 2.1 search results are listed below including common and non-listed species. The analysis and following determination are based on Habitat Assessment results and the most recent occurrence and proximity to the Project Area per Section 2.1 (Table 1, Table 2).

- **Present:** Species known to occur on the site, based on CNDDB records, and/or was observed on the site during the field survey.

- **High:** Species known to occur on or near the site (based on CNDDB record within 5 miles), and there is suitable habitat on the site.

- **Low:** Species known to occur on or near the site (based on CNDDB record within 5 miles), but there is no suitable habitat onsite.

- **None:** Species is not known to occur on within 5 miles of the site and there is no suitable habitat on the site. -OR- Species was surveyed for during the appropriate season with negative results.

Table 3 – Regionally Occurring Special-Status Wildlife Species

Common/ Scientific Name	*Listing Status	Habitat Requirements	Potential for Occurrence
Amphibians			
California tiger salamander (*Ambystoma californiense*) Central California DPS	FT/ST/CWL	Grasslands, oak savannah riparian woodlands and lower elevations of coniferous forests, ditches, vernal pools, and wetlands.	**Low:** Limited potential upland dispersal or estivating habitat occurs in the northwest 10 acres of the Project Area and the species has not been reported previously within five miles of the Project Area.
Western Spadefoot toad (*Spea hammondii*)	-/-/SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	**Low:** The spadefoot toad has low potential to occur in the Project Area. Though the species occurs within 2 miles of the Project Area, no breeding habitat occurs on the property and limited unfarmed upland dispersal habitat.
Birds			
Belding's Savannah Sparrow (*Passerculus sandwichensis beldingi*)	-/-/BCC/MBTA	Inhabits coastal salt marshes, from Santa Barbara south through San Diego County. Nests in Salicornia on and about margins of tidal flats.	**None**. No salt marsh or pickleweed nesting habitat occur in the Project Area. No tidal flats.
Bullock's Oriole (*Icterus bullockii*)	-/-/BCC/MBTA	Found in open broadleaf woods, foraging among leaves in trees.	**None**. Species is not known to occur on within 5 miles of the site and there is no suitable habitat on the site.
Burrowing Owl (*Athene cunicularia*)	-/-/ SSC/BCC/MBTA	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**None**. Species is not known to occur on within 5 miles of the site and there is no suitable habitat on the site.

California Gull (*Larus californicus*)	-/-/CWL/BCC/MBTA	Littoral waters, sandy beaches, waters and shorelines of bays, tidal mudflats, marshes, lakes, etc. Colonial nester on islets in large interior lakes, either fresh or strongly alkaline.	**None:** No habitat occurs for this aquatic bird species.
Clark's Grebe (*Aechmopohrus clarkii*)	-/-/CWL/MBTA	Ponds, seasonal pools, open water	**None:** No habitat occurs for this aquatic bird species.
Loggerhead Shrike (*Lanius ludovicianus*)	-/-/SSC/MBTA	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	**None**. Species is not known to occur on within 5 miles of the site and there is no suitable habitat on the site.
Nuttall's Woodpecker (*Dryobates nuttallii*)	-/-/BCC/MBTA	Forages for acorns and insects and nests in oak woods.	**Low:** Only limited oak trees occur in the northwest Project Area.
Oak titmouse (*Baeolophus inornatus*)	-/-/BCC/MBTA	Oak forests of the Pacific slope between southern Oregon and Baja California, especially around the Central Valley of California. Strongly associated with oaks.	**Low:** Only limited oak trees occur in the northwest Project Area.
Short-billed Dowitcher (*Limnodromus griseus*)	-/-/BCC/MBTA	Forages on mudflats and shallow ponds. Vernal pools.	**None:** No aquatic, wetland or mudflat pond habitat occurs in the Project Area.
Swainson's hawk (*Buteo swainsoni*)	-/ST/SSC BCC/MBTA	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	**High**: Species known from 9 historic occurrences within 5 miles of site to the west, northwest and southwest. Closest occurrence is within one mile of the site, and there is limited suitable nesting and abundant foraging habitat on the site.

Tricolored blackbird (*Agelaius tricolor*)	-/ST/SSC BCC/MBTA	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony	**None:** No pond or wetland habitat occurs with broadleaf cattail or tule stands for nesting colony.
Western Grebe (*Aechmophorus occidentalis*)	-/-/BCC/MBTS	Ponds, seasonal pools, mudflats	**None:** No aquatic seasonal pool or ponds occur in the Project Area.
Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)	FT/SE/MBTA	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	**Low:** No nesting habitat occurs in Project Area. Limited oak woodland foraging habitat.
Invertebrates			
Crotch Bumble Bee (*Bombus crotchii*)	-/SSC/-	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include *Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia*, and *Eriogonum*.	**None:** The Project Area lacks the native wildflower field nectar habitat needed to support this species.
Hopping's Blister Beetle (*Lytta hoppingi*)	-/SSC	Inhabits the foothills at the southern end of the Central Valley. Found on flowers and plants.	**None:** Limited plant cover is available on the property in the northwest portion of the Project Area. Area is cleared and maintained.
Monarch Butterfly (*Danaus plexippus*)	FC/-/-	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	**None:** No roosting, foraging (nectar-flowers) or reproductive host plant habitat (Milkweed, (Asclepias sp.) is present in the Project Area.

Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)	FT/-/-	Only occurs in the Central Valley of California, in association with blue elderberry (*Sambucus mexicana*), in riparian scrub. Prefers to lay eggs in elderberries 2-8 inches in diameter; some preference shown for "stressed" elderberries.	**None:** No elderberry shrub host plant potential habitat occurs in the Project Area.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT/-/-	Endemic to the vernal pools in grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	**None:** No seasonal aquatic habitat for this species, such as vernal pools, occurs in the Project Area.
Vernal pool tadpole shrimp (*Lepidurus packardi*)	FE/-/-	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass-bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	**None:** No seasonal aquatic habitat for this species, such as vernal pools, occurs in the Project Area.
Mammals			
American Badger (*Taxidea taxus*)	-/-/SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**None:** The site lacks potential undisturbed grassland habitat. The site is maintained and disced regularly with active agriculture use.
Pallid bat (*Antrozous pallidus*)	-/-/SSC	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**None**. Species is not known to occur on within 5 miles of the site and there is no suitable habitat on the site.

San Joaquin Kit Fox (*Vulpes macrotis mutica*)	FE/ST	Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.	**Low:** Site has dispersal habitat, but has limited foraging or denning habitat and two previous records occur 3 and 4.7 miles northwest of the Project Area.
Tipton Kangaroo Rat (*Dipodomys nitratoides nitratoides*)	FE/SE	Saltbrush scrub and sink scrub communities in the Tulare Lake Basin of the southern San Joaquin Valley. Needs soft friable soils which escape seasonal flooding. Digs burrows in elevated soil mounds at bases of shrubs.	**None:** No alkali scrub or sink scrub habitat occurs in the Project Area. No seed forage habitat occurs in the Project Area. The Project Area is an active agricultural field.
Western Mastiff Bat (*Eumops perotis californicus*)	-/-/SSC	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	**Low:** Limited oak woodland roosting and moderate grassland foraging habitat for this species in the Project Area. The area is heavily farmed and maintained. Species is known from one record 2 miles southeast of Project Area.
Reptiles			
Blunt-nosed Leopard Lizard (*Gambelia sila*)	FE/SE/FP	Resident of sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief. Seeks cover in mammal burrows, under shrubs or structures such as fence posts; they do not excavate their own burrows.	**None:** No alkali scrub or desert scrub habitat occurs in the Project Area. The Project Area is an active agricultural field.
Northern California Legless Lizard (*Anniela pulchra*)	-/-/SSC	Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.	**None:** No sand outcrops or sandy habitat occurs in the Project Area. The Project Area is an agricultural field.
Western Pond Turtle (*Actinemys marmorata*)	-/-/SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland	**Low:** Low quality potential habitat in the form of an open water unvegetated canal on the eastern edge and another just offsite to the northwest leave potential for this species to occur nearby. One historic occurrence of the

		habitat up to 0.5 km from water for egg-laying.	species is known from four miles east of Project Area.

*Listing Status Notes:

Federal:
FE – Federally listed Endangered
FT – Federally listed Threatened
FC – Federal Candidate Species
FWL – USFWS Watch list
BCC – USFWS Bird of Conservation Concern
MTBA – Migratory Bird Treaty Act

State:
SE – State listed Endangered
ST – State listed Threatened
SC – State Candidate Species
SR – State Rare Species
SA – State Special Animal
FP – CDFW Fully Protected Species
SSC – CDFW Species of Special Concern
CWL – CDFW Watch List

Table 4 – Regionally Occurring Special-Status Plant Species

Common/ Scientific Name	*Status Fed/CA/CNPS/ Bloom Period	Habitat Description	Potential to Occur
Alkali-sink Goldfields (*Lasthenia chrysantha*)	-/-/1B.1 Feb-Apr	Vernal pools, alkaline microhabitat. Found at elevations between 0 and 655 ft.	**None:** No vernal pool habitat occurs in the Project Area.
Brittlescale (*Atriplex depressa*)	-/-/1B.2 Apr-Oct	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools. Alkaline and clay microhabitat. Found at elevations between 5 and 1050 ft.	**None:** No native habitat or vernal pool habitat occurs in the Project Area.
California Alkali Grass (*Pucinellia simplex*)	-/-/1B.2 Mar-May	Chenopod scrub, meadows and seeps, valley and foothill grassland and vernal pools. Sinks, alkaline, flats, lake margins, and vernally mesic microhabitats. Found at elevations between 5 and 3050 ft.	**None:** No vernal pool habitat or chenopod scrub occurs in the Project Area.
California Jewelflower (*Caulanthus californicus*)	FE/CE/1B.1 Feb-May	Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland. Found at elevations between 200 and 3280 feet.	**Low:** Limited grassland potential habitat occurs in the Project Area.
California Satintail (*Imperata brevifolia*)	-/-/2B.1 Sep-May	Chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps (often alkali), and riparian scrub. Mesic microhabitat. Found at	**None:** No wetland habitat or shrub-dominated habitat occurs in the Project Area.

		elevations between 0 and 3985 ft.	
Coulter's Goldfields (*Lasthenia glaberata ssp. coulteri*)	-/-/1B.1 Feb-Jun	Marshes and swamps (coastal salt), playas and vernal pools. Found at elevations between 5 and 4005 ft.	**None:** No vernal pools, marshes or swamps occur in the Project Area.
Earlimart Orache (*Atriplex cordulata var. erecticaulis*)	-/-/1B.2 Aug-Sep (Nov)	Valley and foothill grassland. Vernally mesic microhabitat. Found at elevations between 130 and 330 ft.	**None:** Though some grassland occurs in the Project Area it is not within vernal pool or vernal swale habitat. Species not observed during current survey effort.
Ewan's Larkspur (*Delphinium hansenii ssp. ewanianum*)	-/-/4.2 Mar-May	Cismontane woodland, valley and foothill grassland. Found at elevations between 195 and 1970 ft.	**Low:** Limited heavily maintained oak woodland and grassland occur in the Project Area.
Heartscale (*Atriplex cordulata var. cordulata*)	-/-/1B.2 Apr-Oct	Chenopod scrub, meadows and seeps, valley and foothill grassland. Microhabitats sometimes saline, sometime alkaline. Found at elevations between 0-1835 ft.	**Low:** Limited maintained grassland in the northern Project Area. Species not observed during current survey effort.
Hoover's Spurge (*Euphorbia hooveri*)	FT/-/1B.2 Jul-Sep (Oct)	Vernal pools. Found at elevations between 80 and 820 feet.	**None:** No vernal pool habitat occurs in the Project Area.
Lesser Saltscale (*Atriplex miniscula*)	-/-/1B.1 May-Oct	Chenopod scrub, playas, valley and foothill grassland. Microhabitats are alkaline or sandy. Found at elevations between 50 and 655 ft.	**Low:** Limited maintained grassland in the northern Project Area. Species not observed during current survey effort.
Recurved Larkspur (*Delphinium recurvatum*)	-/-/1B.2 Mar-Jun	Chenopod scrub, cismontane woodland, valley and foothill grassland. Alkaline microhabitat. Found at elevations between 10 and 2590 ft.	**Low:** Limited maintained grassland and woodland in the northern Project Area. Species not observed during current survey effort.
Sanford's Arrowhead (*Sagittaria sanfordii*)	-/-/1B.2 May-Oct (Nov)	Marshes and swamps (shallow freshwater). Found at elevations between 0 and 2135 ft.	**None:** No marsh or swamp habitat occurs in the Project Area.
San Joaquin Adobe Sunburst (*Pseudobahia peirsonii*)	FT/CE/1B.1 Feb-Apr	Cismontane woodland, valley and foothill grassland. Adobe or clay microhabitat. Found	**None:** Disturbed and regularly maintained oak woodland and grassland occur in

		at elevations between 295 and 2625 ft.	northwestern portion of Project Area. Species not known to occur within 5 miles of site.
San Joaquin Valley Orcutt Grass (*Orcuttia inaequalis*)	FT/CE/1B.1 Apr-Sep	Vernal pools. Found at elevations between 35 and 2475 ft.	**None:** No vernal pool habitat occurs in the Project Area.
Spiny-sepaled Button-celery (*Eryngium spinosepalum*)	-/-/1B.2 Apr-Jun	Vernal pools, valley and foothill grassland. Found at elevations between 260 and 3200 feet.	**None:** No vernal pool habitat occurs in the Project Area.
Subtle Orache (*Atriplex subtilis*)	-/-/2B.2 (Apr) Jun-Sep (Oct)	Valley and foothill grassland. Found at elevations between 130 and 330 feet.	**Low:** Limited maintained grassland habitat. Species not observed during current survey.
Vernal Barley (*Hordeum intercedens*)	-/-/3B.2 Mar-Jun	Coastal dunes, coastal scrub, valley and foothill grassland (depressions, saline flats) and vernal pools. Found at elevations between 15 and 3280 ft.	**None:** No dunes, scrub or vernal pool habitat occurs in the Project Area.
Vernal Pool Smallscale (*Atriplex persistens*)	-/-/1B.2 Jun-Oct	Vernal pools (alkaline). Found at elevations between 35 and 375 ft.	**None:** No alkaline vernal pool habitat occurs in the Project Area.
Watson's Amaranth (*Amaranthus watsonii*)	-/-/4.3 Apr-Sep	Mojavean Desert scrub and Sonoran Desert scrub. Found at elevations between 65 and 5580 ft.	**None:** No desert scrub occurs in the Project Area.
Winter's Sunflower (*Helianthus winteri*)	-/-/1B.2 Jan-Dec	Cismontane woodland, valley and foothill grassland. Microhabitat includes relatively steep, south-facing slopes, granitic, openings, roadsides (often), and rocky (often). Found at elevations between 410 and 1510 ft.	**None:** The Project Area is outside the known elevation range for the species and no rocky woodland or grassland sites occur in the Project Area.

*Listing Status Notes:

Federal: FE – Federally listed Endangered
FT – Federally listed Threatened
FC – Federal Candidate Species

State: CE – State Listed as Endangered
SE – State listed Endangered
ST – State listed Threatened
SC – State Candidate Species
SR – State Rare Species

CRPR: California Native Plant Society Rare Plant Rank
1A – Considered extirpated in CA
1B – Rare, threatened, or endangered in CA and elsewhere
2 – Rare, threatened, or endangered in CA but common elsewhere
4 – Limited distribution (Watch-list)

CRPR Extensions 0.1 – Seriously endangered in California
0.2 – Fairly endangered in California
0.3 – Not very endangered in California

4.1 Special-Status Species Descriptions

This section describes identifiable physical characteristics and habitat requirements for special-status species identified in the CNDDB records search that were within 5 miles of the Project Area. It also discusses their potential to occur following the findings of the survey.

Special-Status Wildlife Species

California tiger salamander (*Amystoma californiense*)

California tiger salamander is listed as Threatened on the Federal and State level. Adults range in size from 15-22 centimeters (6 to 9 inches) long and have a dark background color with distinctive yellow spots. Juveniles look much like adults but lack the yellow spots. Larval California tiger salamander are grayish green in color and have the appearance of tadpoles with obvious, external gills. The eggs are clear and typically laid singly or in groups of three or four in shallow ponds.

Endemic to California, this species is found in grasslands, oak savannah woodlands, edges of mixed woodland, lower elevations of coniferous forests, and in heavily grazed fields along the Central California Coast and within the Central San Joaquin Valley. They may breed in ditches where water is present for a long enough duration for eggs and larvae to metamorphose into adults. During the non-breeding season (approximately late May through early November), California tiger salamander live in small mammal burrows, typically those of ground squirrels and pocket gophers. They spend most of each year on land, emerging from refugia only occasionally, usually on rainy nights, and have been observed on land within 1.24 miles (2 kilometers) from potential breeding pools.

A search of CNDDB records indicate the nearest occurrence of this species is more than five miles away from the Project Area. No potential aquatic breeding habitat occurs in the Project Area. The majority of the Project Area is active agricultural land that is unsuitable for this species. The northern oak woodland and grassland represent limited suitable dispersal or potential estivating habitat, though small mammal burrows were not observed to be abundant. California tiger salamanders are concluded to have a low potential to occur in the Project Area.

Western spadefoot (*Spea hammondii*)

Western spadefoot toad is a State species of special concern. Their range spans throughout the Central Valley and adjacent foothills. They can be common where they occur. In the Coast Ranges they are found from Point Conception in Santa Barbara County, south to the Mexican border. Elevations of occurrence extend from near sea level to 1,363 meters (4,460 feet) in the southern Sierra foothills (Jennings and Hayes 1994). This species occurs primarily in grasslands but occasionally appears in the valley-foothill hardwood woodlands or persists in orchard and vineyard habitats for a few years.

Western spadefoot toads spend most of the year underground in burrows up to 0.9 meters (36 inches) deep (Stebbins 1972). They construct their own burrows but have been seen infrequently using mammal burrows.

Adult western spadefoot toads feed on insects, worms, and other invertebrates (Stebbins 1972). Tadpoles consume planktonic organisms and algae but are also carnivorous—preying and consuming dead aquatic larvae of other amphibians as well as other western spadefoot tadpoles (Bragg 1964).

Rainfall is important in the formation and maintenance of breeding ponds. Most surface movements

by adults are associated with rain or high humidities at night. Breeding and egg laying happens exclusively in shallow temporary pools formed by heavy winter rains. Egg masses are attached to plant material or the upper surfaces of small, submerged rocks (Stebbins 1951). During dry periods, the moist soil inside the burrows provides water for absorption through the skin (Ruibal et al. 1969, Shoemaker et al. 1969). Dispersal of post metamorphic juveniles from breeding ponds can occur without rainfall.

No breeding pond potential habitat for this species occurs in the Project Area. Limited upland dispersal habitat occurs in the northern ten acres of the Project Area. Most of the Project Area is active agricultural land and is unsuitable for the species. Understory vegetation is annually maintained in the northern Project Area, which involves discing. These practices do not improve the spadefoot toad's potential to occur. One previous known occurrence from the CNDDB is 2.1 miles northwest of Project Area.

Swainson's hawk (*Buteo swainsoni*)

Swainson's hawk is listed as Threatened on the State level and is a listed species under the Migratory Bird Treaty Act. However, due to its common distribution throughout the country, it is not listed at the Federal level. This species favors open habitat for foraging such as agricultural fields, pastures, and row crops. They nest in scattered stands of eucalyptus, willow, oak, cottonwood, and conifers. On occasion, Swainson's hawk will nest on a power pole or transmission tower. The location of Swainson's hawk nests is typically on the tallest point in or near an open field, giving this species a full view of its foraging area while nesting.

Due to their late return to California for the breeding season, Swainson's hawk often uses the same nests for serval breeding seasons and even generations. If a nest is constructed, it is often constructed with loose bundles of sticks and debris quickly stacked together. They are also territorial of their nests and will dive bomb any other species attempting to use their nest. Red-tailed hawk and great horned owls, which overlap in habitat, are species known to use Swainson's hawk nests. The incubation period for Swainson's hawk is approximately 35 days, and the nesting period is 17 to 22 days. The breeding season for this species begins in March and ends in September.

The Project Area is primarily active agricultural land with some potential nesting and foraging habitat in the oak and grasslands in the northwest portion of the properties. The active agricultural land also may have potential use as foraging habitat, especially when fallow. Eight known occurrences of Swainson Hawk are within 5 miles of the Project Area and the closest is one mile west. A Swainson hawk and nesting bird survey should be conducted in all of the oak trees in the northern property prior to removal of the trees.

Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)

Yellow-billed cuckoos have uniform grayish-brown plumage on their head and back, and dull white underparts. Their tails are long with two rows of four to six large white circles on the underside. The bill of yellow-billed cuckoos is short to medium in length and curved downward with a black upper mandible and a yellow or orange lower mandible. Yellow-billed cuckoos have zygodactylous feet, meaning that of the four toes, the middle two point forward and the outer two point backward.

Yellow-billed cuckoos prefer open woodlands with clearings and a dense shrub layer. They are often found in woodlands near streams, rivers or lakes. In North America, their preferred habitats include abandoned farmland, old fruit orchards, successional shrubland and dense thickets. In winter, yellow-billed cuckoos can be found in tropical habitats with similar structure, such as scrub forest and mangroves.

The Project Area has approximately 10 acres of oak woodland and unfarmed grassland that could represent foraging habitat for this species. However, no riparian forest or habitat occurs in the Project Area.

San Joaquin kit fox (*Vulpes macrotis mutica*)

The San Joaquin kit fox is listed as Threatened at the Federal level and Endangered at the State level. They are petite, light-colored canids, approximately 50 centimeters (20 inches) in length, with bushy, black-tipped tails, large ears, and pointed snouts.

San Joaquin kit fox is a desert-adapted species which occurs mainly in arid, flat grasslands, scrublands, and alkali meadows where the vegetation structure is relatively short. This species uses dens year-round and needs loose-textured soils suitable for burrowing. They primarily prey on kangaroo rats and other small rodents, as well as large insects and occasionally rabbits. A typical kit fox den is anywhere from four to 10 inches (25 cm) in diameter, and is taller than it is wide, often with a keyhole shape. Dens usually have dirt berms and matted vegetation adjacent to the entrances, and tracks and prey remains will normally be detected nearby. They may also utilize man-made structures such as pipes and culverts as dens.

There were no signs of San Joaquin kit fox den sites or activity at the time of the Habitat Assessment. Suitable habitat for this species is poor within the Project Area. A search of CNDDB records indicate the nearest occurrences of kit fox are 3 and 4.7 miles away north and northwest from the Project Area. No other observations of San Joaquin kit fox have been recorded within 5 miles (8 kilometers) of the Project Area. Due to urbanization of the surrounding area, lack of suitable habitat in the form of natural grassland habitat, and distance of other known occurrences from the site, occurrence of San Joaquin kit fox within the vicinity of the Project Area is unlikely, and the proposed Project is unlikely to adversely affect any population of this species.

Western mastiff bat (*Eumops perotis californicus*) and Pallid bat (*Antrozous pallidus*)

Western mastiff bat and pallid bat are State listed Species of Special Concern. The mastiff bat species has a brown fur body length of 14 to 19 centimeters (5.5 to 7.5 inches), a wingspan of over 56 centimeters (22 inches), and body mass range from 60 to 70 grams (2.1 to 2.5 ounces). Western mastiff bat is the largest native bat in the United States. Thus, such morphology allows for rapid, sustained flight but limits maneuverability. This manner of flight is adaptive to flying in open habitats.

Western mastiff bats and pallid bats catch and feed on insects while in flight. The insects consumed are typically relatively small, low-flying and weak-flying forms. Over rugged terrain western mastiff bats naturally forage at much greater heights of 60 meters (195 feet) above the ground. Crevices in cliff faces, high buildings, trees, and tunnels are required for roosting. When roosting in rock crevices, this species needs vertical faces to drop off to take flight.

Western mastiff bats and pallid bats have yearlong nocturnal activity. They generally go into daily torpor from December through February but usually resume activity each night to feed, except when temperatures drop below 5°C (41°F). Nocturnal foraging range may exceed 24 kilometers (15 miles) from roost sites. Western mastiff bat rarely uses night roost and has an exceptionally long foraging period, up to 6-7 hours per night. Their echolocation can be heard from up to 300 meters (980 feet) away. They are non-migratory with no known home range and no known territory. They are known to roost along or in

small colonies with fewer than 100 bats, and commonly share roosts with other large bats such as *Eptesicus fuscus*, *Antrozous pallidus*, and *Tadarida brasiliensis*.

Western mastiff bats and pallid bats can be found in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban. Roosts are often found in crevices in cliff faces, buildings, trees and tunnels. Their range includes the southeastern San Joaquin Valley and Coastal Ranges, from Monterey County southward through southern California, and from the coast eastward to the Colorado Desert. Suitable habitat for western mastiff bat and pallid bat consists of extensive open areas for foraging with abundant roost locations provided by crevices in rock outcrops and buildings. They need at least 3 meters (9.8 feet) of open space under roosting spot for takeoff.

Nursery roosts are tight rock crevices, caves, mines or tree hollows at least 90 centimeters (35 inches) deep and 5 centimeters (2 inches) wide, or crevices in buildings. The duration of pregnancy is between 80 to 90 days with mating beginning in early spring (March). The gestation period is unknown. Parturition occurs from early April through August or September and varies more than any other bat species in the United States. One young is produced per female bat per year.

No bat roosting habitat occurs in the Project Area in the form of rock outcrops or crevices or buildings. Potential foraging habitat does occur in the air space over the Project Area. The potential for these bat species to occur is considered low.

Western pond turtle (*Actinemys marmorata*)

The western pond turtle is listed as a Species of Special Concern on the State level. It is found throughout California west of the Pacific Crest, and along the Mojave River watershed, ranging from sea level to 4,500 feet (1,372 meters). The western pond turtle's diet consists of both plant material and invertebrates, any life forms found near water sources. Mating typically occurs between April and May, but this species has been observed relocating to find new food sources or breeding locations between March and June. This species requires basking sites and suitable upland habitat for egg-laying. Though an open water channel occurs along the eastern border of the Project and another open water ditch occurs near the northwest corner, neither aquatic feature has any vegetation associated with it growing in the water or along the canal channels.

This species prefers vegetation associated with aquatic habitat. Neither canal occurs in the Project Area and no basking sites are present, however both canals are near the site. The closest historic occurrence of western pond turtle is recorded approximately four miles east-northeast of the Project Area.

Special-Status Plant Species

California Jewelflower

This annual wildflower species is extremely rare and is both a State and federally listed member of the mustard family. It is found in grasslands, chenopod scrub and juniper woodland. The current survey occurred outside of it's known bloom period when it is identifiable. The species has low potential to occur in the Project Area given the disturbed and maintained nature of the Project Area.

Ewan's Larkspur

Limited oak woodland and uncultivated grassland potential habitat occur in the Project Area for this rare larkspur species. The current survey occurred outside of the bloom period for this species. The species has low potential to occur.

Heartscale

This small annual member of the goosefoot family (Chenopodiaceae) has limited and marginal potential grassland habitat in the Project Area. One previous historic occurrence of this species that was within five miles of the Project Area but has since been extirpated. Low potential for this species occurs in the Project Area.

Lesser Saltscale

This small annual member of the goosefoot family (Chenopodiaceae) has limited and marginal potential grassland habitat in the Project Area. One previous historic occurrence of this species was within five miles of the Project Area but has since been extirpated. Low potential for this species occurs in the Project Area.

Subtle Orache

This small annual member of the goosefoot family (Chenopodiaceae) has limited and marginal potential grassland habitat in the Project Area. One previous historic occurrence of this species from the CNDDB was within five miles of the Project Area but has since been extirpated. Low potential for this species occurs in the Project Area.

Recurved Larkspur

Limited oak woodland and uncultivated grassland potential habitat occur in the Project Area for this rare larkspur species. The current survey occurred outside of the bloom period for this species. The species has low potential to occur.

The Project Area is comprised from approximately 49 acres of active agricultural land, approximately 5.6 acres of valley oak woodland that has a disked and maintained understory and another 4.5 acres of regularly disked grassland. It is bounded by an open residential property with denser valley oak woodland on the northwestern boundary of the property.

There is a riverine, non-wetland canal just northwest of the northwest corner of the Project Area and a linear paved non-wetland water canal along one portion of the southeastern boundary which was inundated and without vegetation at the time of the Biological Assessment. The Saint Johns River is more than five miles north of the Project Area. There are no structures on the property, and a little more than twenty valley oak trees compose the woodland in the northwestern corner. Though the majority of the

property was used to grow corn this year, the property had been cleared, maintained and recently disked, likely for fire safety. No nests or roosting bats were observed in the oak tree grove in the northwest corner, nor were any ground nests observed. Powerline poles exist along Road 92, but not on the property itself, and did not appear to harbor any raptor nests. No wetlands, vernal pools or jurisdictional waters were located in the Project Area.

4. Findings

During the Biological Assessment, Soar Environmental did not observe any of the referenced special-status species within the Project Area or environmental footprint. However, grading of the Project Area will result in removing some grassland and oak woodland habitat. The findings for this report are summarized below.

Critical Habitats

No critical habitats occur within the vicinity of the Project's environmental affect area, Project Area or project footprint.

Project Impacts

The project will cause permanent impacts to predominantly active agricultural land and heavily maintained (e.g. regularly mowed and disked) annual grassland and valley oak woodland in the northern Project Area. No fish, or habitat that could support aquatic species occurs on the property. Potential wildlife resources the Project could impact would be tree-nesting bird species such as Swainson Hawk, due to required tree removals and loss of foraging habitat.

The Project Area contains a section of valley oak woodland in the northwest corner. The project will require the removal of approximately twenty-one valley oak trees.

Conclusion

From the information gathered in the data records search and analysis of the habitat on site during the survey there is limited potential native plant and wildlife habitat available in the Project Area given that the majority of the property is active agricultural land. However, of the regionally occurring species, Swainson hawk has the highest potential to occur or be impacted by development of the project.

5. Recommendations

The following mitigation measures are intended to reduce and minimize impacts under CEQA, the California Endangered Species Act, and the federal Endangered Species Act for effects on species and habitats. Implementation of the following mitigation measures would reduce project-related affects to covered species and other biological resources to less than significant.

6. Recommended Mitigation Measures

Mlitigation Measure 1: Swainson's Hawk Nesting Habitat

If construction, grading, or project-related improvements are to commence between March 1 and September 15, a focused survey for Swainson's hawk nests on the site and within ¼ mile of the site shall be conducted by a qualified biologist no later than 30 days prior to the start of construction work (including clearing and grubbing). If active nests are found, the California Fish and Wildlife shall be contacted to determine appropriate protective measures, and these measures shall be implemented prior to the start of any ground-disturbing activities. If no active nests are found during the focused survey, no further mitigation will be required.

Mlitigation Measure 1a: Nesting Bird Survey

If project-related activities are scheduled between February 1 to August 31 (the typical nesting season), a focused survey for nests shall be conducted by a Designated Biologist within three (3) calendar days prior to the beginning of Project-related activities. The Designated Biologist shall survey a minimum radius of 500-feet for migratory birds around the Project Area and for sign of roosting bats. If no active nests or roosts are found, project activities may proceed as scheduled.

Mlitigation Measure 1b: Active Nests or Roosts

If an active nest or roost is found, active nests should be avoided, and a no disturbance or destruction buffer shall be determined and established by a Designated Biologist. The buffer shall be kept in place until after the breeding nesting season or the Designated Biologist confirms the young have fledged, are foraging independently, and the nest is no longer active for the season. The extent of these buffers shall be determined by the Designated Biologist and will depend on the species present, the level of noise or construction disturbance, line of sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers.

Mlitigation Measure 1c: Project Delay

If a lapse in project-related work of fourteen (14) calendar days or longer occurs, the Designated Biologist shall complete another focused survey before Project work can be reinitiated.

7. Study Limitations

This Report has been prepared in accordance with generally accepted environmental methodologies and contains all the limitations inherent in these methodologies. The Report documents site conditions that were observed during field reconnaissance and do not apply to future conditions. No other warranties, expressed or implied, are made as to the professional services provided under the terms of our contract and included in this Report.

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APPENDIX A:
Project Area Photographs



Photo 1 – 5.6 acre valley oak woodland on northwest edge



Photo 2 – Overview of Main Active Agricultural Property Site (View East)



Photo 3 – Southeastern Edge with Canal



Photo 4 – West Side of Project Area (View North)



Photo 5 – Small mammal burrows (ground squirrel)





Photo 6 – Eastern edge of Project Area, Mexican sprangletop grass (*Leptochloa fusca* ssp. *uninervia*) along canal edge



Photo 7 – Valley Oak Woodland at northwestern corner



Photo 8 – Center of Project Area (View South)



Photo 9 – Center of property from Inner corner edge near (offsite) orchards (View North)



Photo 10 – Valley oak (Quercus lobata) leaf, northern property



Photo 11– Ornamental Fan palm in southern property



APPENDIX B:

U.S. Fish & Wildlife Service IPaC Resource List

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

Tulare County, California



Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

NOT FOR CONSULTATION

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
San Joaquin Kit Fox Vulpes macrotis mutica Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2873	Endangered
Tipton Kangaroo Rat Dipodomys nitratoides nitratoides Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7247	Endangered

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard Gambelia silus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/625	Endangered

Amphibians

NAME	STATUS
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp Branchinecta lynchi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened

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Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

There are no documented cases of eagles being present at this location. However, if you believe eagles may be using your site, please reach out to the local Fish and Wildlife Service office.

Additional information can be found using the following links:

- Eagle Managment https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/ documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

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The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Belding's Savannah Sparrow Passerculus sandwichensis beldingi This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15
Bullock's Oriole Icterus bullockii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25
California Gull Larus californicus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31
Clark's Grebe Aechmophorus clarkii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 31
Nuttall's Woodpecker Picoides nuttallii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Oak Titmouse Baeolophus inornatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Short-billed Dowitcher Limnodromus griseus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Tricolored Blackbird Agelaius tricolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10

Western Grebe aechmophorus occidentalis Breeds Jun 1 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

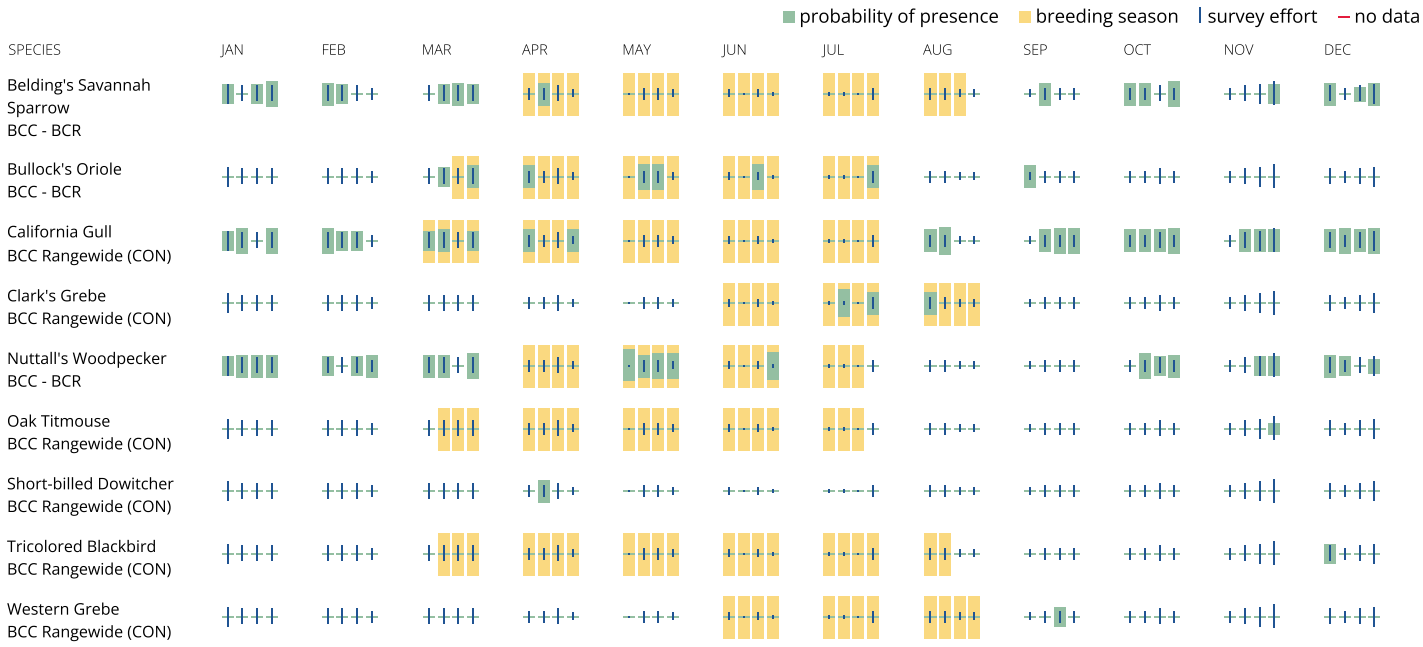
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



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Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in

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knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

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Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

RIVERINE

R4SBCx

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or

adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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APPENDIX C:

California Department of Fish and Wildlife RareFind

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Traver (3611944) OR Goshen (3611934) OR Tulare (3611923) OR Visalia (3611933) OR Cairns Corner (3611922) OR Monson (3611943) OR Paige (3611924) OR Exeter (3611932) OR Ivanhoe (3611942))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
alkali-sink goldfields *Lasthenia chrysantha*	PDAST5L030	None	None	G2	S2	1B.1
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
American bumble bee *Bombus pensylvanicus*	IIHYM24260	None	None	G3G4	S2	
An andrenid bee *Andrena macswaini*	IIHYM35130	None	None	G2	S2	
brittlescale *Atriplex depressa*	PDCHE042L0	None	None	G2	S2	1B.2
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S2	SSC
California alkali grass *Puccinellia simplex*	PMPOA53110	None	None	G2	S2	1B.2
California jewelflower *Caulanthus californicus*	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
California linderiella *Linderiella occidentalis*	ICBRA06010	None	None	G2G3	S2S3	
California satintail *Imperata brevifolia*	PMPOA3D020	None	None	G3	S3	2B.1
California tiger salamander - central California DPS *Ambystoma californiense pop. 1*	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
Coulter's goldfields *Lasthenia glabrata ssp. coulteri*	PDAST5L0A1	None	None	G4T2	S2	1B.1
Crotch bumble bee *Bombus crotchii*	IIHYM24480	None	Candidate Endangered	G2	S2	
Earlimart orache *Atriplex cordulata var. erecticaulis*	PDCHE042V0	None	None	G3T1	S1	1B.2
Great Valley Valley Oak Riparian Forest *Great Valley Valley Oak Riparian Forest*	CTT61430CA	None	None	G1	S1.1	
heartscale *Atriplex cordulata var. cordulata*	PDCHE040B0	None	None	G3T2	S2	1B.2
Hoover's spurge *Euphorbia hooveri*	PDEUP0D150	Threatened	None	G1	S1	1B.2
Hopping's blister beetle *Lytta hoppingi*	IICOL4C010	None	None	G1G2	S2	
lesser saltscale *Atriplex minuscula*	PDCHE042M0	None	None	G2	S2	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
loggerhead shrike *Lanius ludovicianus*	ABPBR01030	None	None	G4	S4	SSC
Moody's gnaphosid spider *Talanites moodyae*	ILARA98020	None	None	G2G3	S2S3	
Northern California legless lizard *Anniella pulchra*	ARACC01020	None	None	G3	S2S3	SSC
Northern Claypan Vernal Pool *Northern Claypan Vernal Pool*	CTT44120CA	None	None	G1	S1.1	
Northern Hardpan Vernal Pool *Northern Hardpan Vernal Pool*	CTT44110CA	None	None	G3	S3.1	
northern leopard frog *Lithobates pipiens*	AAABH01170	None	None	G5	S2	SSC
pallid bat *Antrozous pallidus*	AMACC10010	None	None	G4	S3	SSC
recurved larkspur *Delphinium recurvatum*	PDRAN0B1J0	None	None	G2?	S2?	1B.2
San Joaquin adobe sunburst *Pseudobahia peirsonii*	PDAST7P030	Threatened	Endangered	G1	S1	1B.1
San Joaquin kit fox *Vulpes macrotis mutica*	AMAJA03041	Endangered	Threatened	G4T2	S3	
San Joaquin Valley Orcutt grass *Orcuttia inaequalis*	PMPOA4G060	Threatened	Endangered	G1	S1	1B.1
Sanford's arrowhead *Sagittaria sanfordii*	PMALI040Q0	None	None	G3	S3	1B.2
spiny-sepaled button-celery *Eryngium spinosepalum*	PDAPI0Z0Y0	None	None	G2	S2	1B.2
subtle orache *Atriplex subtilis*	PDCHE042T0	None	None	G1	S1	1B.2
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S4	
Tipton kangaroo rat *Dipodomys nitratoides nitratoides*	AMAFD03152	Endangered	Endangered	G3T1T2	S2	
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G1G2	S2	SSC
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened	None	G3T3	S3	
Valley Sacaton Grassland *Valley Sacaton Grassland*	CTT42120CA	None	None	G1	S1.1	
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	
vernal pool smallscale *Atriplex persistens*	PDCHE042P0	None	None	G2	S2	1B.2

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
vernal pool tadpole shrimp *Lepidurus packardi*	ICBRA10010	Endangered	None	G3	S3	
western mastiff bat *Eumops perotis californicus*	AMACD02011	None	None	G4G5T4	S3S4	SSC
western pond turtle *Emys marmorata*	ARAAD02030	None	None	G3G4	S3	SSC
western spadefoot *Spea hammondii*	AAABF02020	None	None	G2G3	S3S4	SSC
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Winter's sunflower *Helianthus winteri*	PDAST4N260	None	None	G2?	S2?	1B.2

Record Count: 46

APPENDIX D:

California Native Plant Society Rare Plant Inventory

CNPS Rare Plant Inventory

Search Results

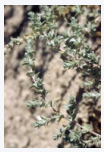
Back | Export Results | Copy Link

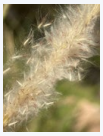
21 matches found. Click on scientific name for details

Search Criteria: CRPR is one of [1A:1B:2A:2B:3:4] , 9-Quad include [3611922:3611933:3611923:3611932:3611943:3611942:3611924:3611934:3611944]

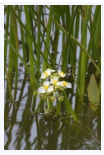
Filter Results:

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Amaranthus watsonii	Watson's amaranth	Amaranthaceae	annual herb	Apr-Sep	None	None	G5?	S3	4.3		2001-01-01	 © 2003 Debra Valov
Atriplex cordulata var. *cordulata*	heartscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G3T2	S2	1B.2	Yes	1988-01-01	 © 1994 Robert E. Preston, Ph.D.
Atriplex cordulata var. *erecticaulis*	Earlimart orache	Chenopodiaceae	annual herb	Aug-Sep(Nov)	None	None	G3T1	S1	1B.2	Yes	2001-01-01	 © 2009 Robert E. Preston, Ph.D.

Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G2	S2	1B.2	Yes	1994-01-01	 © 2009 Zoya Akulova
Atriplex minuscula	lesser saltscale	Chenopodiaceae	annual herb	May-Oct	None	None	G2	S2	1B.1	Yes	1994-01-01	 © 2000 Robert E. Preston, Ph.D.
Atriplex persistens	vernal pool smallscale	Chenopodiaceae	annual herb	Jun-Oct	None	None	G2	S2	1B.2	Yes	2001-01-01	No Photo Available
Atriplex subtilis	subtle orache	Chenopodiaceae	annual herb	(Apr)Jun-Sep(Oct)	None	None	G1	S1	1B.2	Yes	1994-01-01	 © 2000 Robert E. Preston, Ph.D.
Caulanthus californicus	California jewelflower	Brassicaceae	annual herb	Feb-May	FE	CE	G1	S1	1B.1	Yes	1984-01-01	No Photo Available
Delphinium hansenii ssp. *ewanianum*	Ewan's larkspur	Ranunculaceae	perennial herb	Mar-May	None	None	G4T3	S3	4.2	Yes	1994-01-01	No Photo Available
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	None	None	G2?	S2?	1B.2	Yes	1988-01-01	No Photo Available
Eryngium spinosepalum	spiny-sepaled button-celery	Apiaceae	annual/perennial herb	Apr-Jun	None	None	G2	S2	1B.2	Yes	1980-01-01	No Photo Available
Euphorbia hooveri	Hoover's spurge	Euphorbiaceae	annual herb	Jul-Sep(Oct)	FT	None	G1	S1	1B.2	Yes	1974-01-01	No Photo Available

Helianthus winteri	Winter's sunflower	Asteraceae	perennial shrub	Jan-Dec	None	None	G2?	S2?	1B.2	Yes	2014-10-15	 © 2014 Chris Winchell
Hordeum intercedens	vernal barley	Poaceae	annual herb	Mar-Jun	None	None	G3G4	S3S4	3.2		1994-01-01	No Photo Available
Imperata brevifolia	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	None	None	G3	S3	2B.1		2006-12-26	 © 2020 Matt C. Berger
Lasthenia chrysantha	alkali-sink goldfields	Asteraceae	annual herb	Feb-Apr	None	None	G2	S2	1B.1	Yes	2019-09-30	 © 2009 California State University, Stanislaus
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1		1994-01-01	 © 2013 Keir Morse
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	Poaceae	annual herb	Apr-Sep	FT	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Pseudobahia peirsonii	San Joaquin adobe sunburst	Asteraceae	annual herb	Feb-Apr	FT	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	None	None	G2	S2	1B.2		2015-10-15	No Photo Available
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous	May-Oct(Nov)	None	None	G3	S3	1B.2	Yes	1984-01-01	

herb (emergent)



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Showing 1 to 21 of 21 entries

Suggested Citation:
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APPENDIX E:

USDA-NRCS Soil Survey

Soil Map—Tulare County, Western Part, California



Map Scale: 1:4,340 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Tulare County, Western Part, California
Survey Area Data: Version 17, Aug 31, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 16, 2022—May 30, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
101	Akers-Akers, saline-Sodic, complex, 0 to 2 percent slopes	30.3	55.0%
130	Nord fine sandy loam, 0 to 2 percent slopes	24.8	45.0%
Totals for Area of Interest		**55.2**	**100.0%**

APPENDIX F:

Site Plan

September 6, 2023

ELLIOT PROPERTY

TENTATIVE SUBDIVISION MAP

PREPARED FOR: SAN JOAQUIN VALLEY HOMES
5607 AVENIDA DE LOS ROBLES
VISALIA, CA 93291

PREPARED BY: 4CREEKS, INC.
324 S. SANTA FE ST., STE. A
VISALIA ,CA 93292

ACREAGE

59.13 AC 224 UNITS

LEGEND

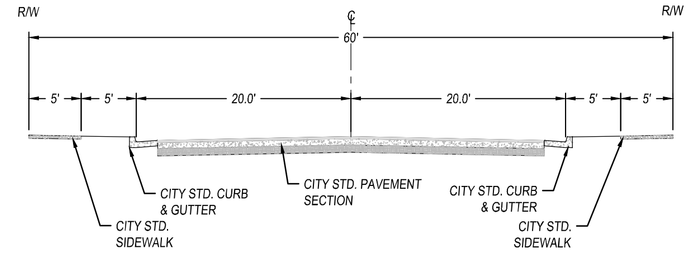
APN:	087-010-006, 087-010-008
ZONING:	AGRICULTURE
GENERAL PLAN:	LOW DENSITY RESIDENTIAL
FLOOD ZONE:	AE & X
ELECTRICITY:	SOUTHEN CALIFORNIA EDISON COMPANY
WATER:	CALWATER
TELEPHONE:	AT&T
NATURAL GAS:	SOUTHERN CALIFORNIA GAS COMPANY
EXISTING USE:	VACANT
PROP. USE:	LOW DENSITY RESIDENTIAL
PROP. MAINTENANCE:	CITY OF VISALIA
	LANDSCAPE SETBACK LOT
	BLOCK WALL

TYPICAL LOT SIZES:

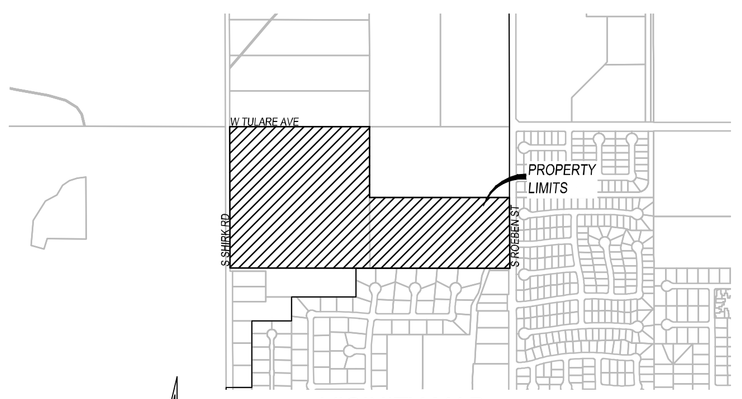
6480 SF MIN. LOTS± (60' X 108' TYP.) (221 UNITS)
6000 SF MIN. LOTS± (60' X 100') (3 UNITS)
**OUTLOTS A-D AND PARKS (4.24 AC) TO BE DEDICATED TO THE CITY OF VISALIA*

UTILITIES:

SEWER:	SHIRK RD - EXIST. 6"
	ROEBEN ST - EXIST. 8"
STORM DRAIN:	TEMP. RETENTION BASIN TO MAINTAIN ALL ON-SITE DRAINAGE
OVERHEAD POWER:	ROEBEN ST (3 DISTRIBUTION, TO BE UNDERGROUNDED)
	SHIRK (5 TRANSMISSION, TO BE RELOCATED)

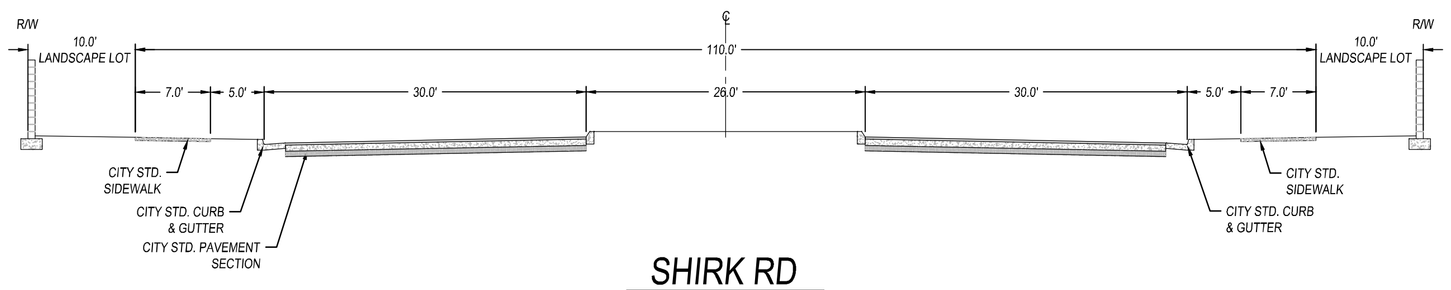


TYPICAL INTERNAL

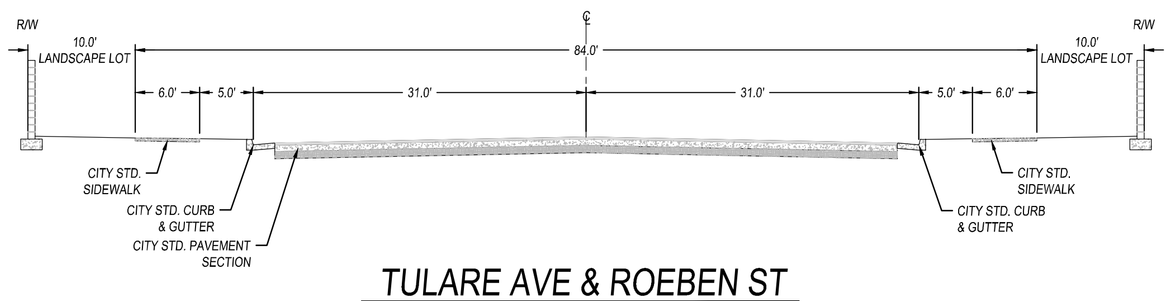


VICINITY MAP

SCALE: 1"=½ MILE



SHIRK RD



TULARE AVE & ROEBEN ST

NORTH

100' 0' 100'

PREPARED BY:
4CREEKS
324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

Appendix C

Cultural Records Search Results

Corporate Headquarters
1322 E. Shaw Avenue, Suite 400 Fresno, CA, 93710
www.soarhere.com • 559.547.8884

Phase I Cultural Resources Assessment
Elliot Housing Subdivision Project, Visalia, CA 93277
Assessor Parcel Numbers
087-010-006, and 087-010-008
Tulare, County, California

Prepared for

4CREEKS
324 South Santa Fe Street, Suite A
Visalia, CA 93292

Prepared by

1322 E Shaw Ave.
Fresno, CA 93710

Heather Froshour, M.A., R.P.A., Senior Archaeologist

December 4, 2023

EXECUTIVE SUMMARY

Soar Environmental Consulting, Inc. (Soar Environmental) has been retained by 4Creeks, Inc. (4Creeks) to prepare a Phase 1 Cultural Resources Assessment (Phase 1 CRA) as part of an Initial Study, for a Housing Subdivision Development Project (Project) in the city of Visalia (City), in accordance with the California Environmental Quality Act (CEQA) prior to implementation of the proposed Project. The proposed project is to construct 224 housing units on 59.13-acres on Accessor Parcel Numbers (APNs) 087-010-006 and 087-010-008. The purpose of the CRA is to provide an inventory of the known and potentially significant cultural resources within the Project area through a California Historical Records Information search (CHRIS) using the Southern San Joaquin Valley Information Center (SSJVIC), as well as a Sacred Lands File & Native American Contacts List Request through the Native American Heritage Commission (NAHC).

The results of the records search indicate two (2) cultural resource(s) recorded within 0.50-mile of the Project area. The records searches indicate one (1) recorded resource within the Project area. The pedestrian survey identified one (1) existing resource within the Project area. No site testing or mitigation measures are required, unless previously undiscovered cultural resources are detected during construction.

Contents

EXECUTIVE SUMMARY…… ii
1.0 INTRODUCTION……... 3
1.1 Project Description……... 4
1.2 Existing Conditions…….. 4
2.0 REGULATORY SETTING……. 4
2.1 Federal…….. 5
2.2 State of California…… 5
2.3 Local……. 8
3.0 SETTING……. 10
3.1 Environmental Setting…….. 10
3.2 Cultural Setting…… 11
3.2.1 Prehistoric Setting……. 11
3.2.2 Ethnographic Setting……. 12
3.2.3 Historic Setting……. 14
4.0 ARCHIVAL RECORDS SEARCH……. 15
4.1 Southern San Joaquin Valley Information Center Records Search……. 15
4.2 Sacred Lands File & Native American Contacts List Request…… 17
4.3 National Register of Historic Places (NRHP) Eligibility Evaluation ……. 17
5.0 PREVIOUS DISTURBANCES IN THE PROJECT AREA……... 19
6.0 FIELD SURVEY METHODS AND RESULTS……. 19
7.0 RECOMMENDED ACTIONS AND MITIGATION MEASSURES……. 21
8.0 REFERENCES CITED…… 24

FIGURES

Figure 1— Project Location, adapted from USGA 7.5’ series Visalia, California, 1949……..... 30
Figure 2— Project Boundary Map…… 31
Figure 3— Soil Types Occurring in the Project area…….. 32
Figure 4— Elliot Property Tentative Subdivision Map…… 33
Figure 5— Overview from north edge of Project area, facing south…… 34
Figure 6— Overview from northeast corner of Project area, facing southwest…… 35
Figure 7— Overview from center of Project area, facing north……..…… 36
Figure 8— Overview from center of Project area, facing east……..…… 37
Figure 9— Overview from center of Project area, facing south……..…..…… 38
Figure 10— Overview from center of Project area, facing west…….. 39
Figure 11— Overview from southeast corner of Project area, facing northwest…….. 40
Figure 12— Overview from south edge of Project area, facing north……..…..…..…..... 41
Figure 13— Overview from southwest corner of Project area, facing northeast…….. 42
Figure 14— Overview from west edge of Project area, facing east……..... 43
Figure 15— Overview from northwest corner of Project area, facing southeast…….. 44

TABLES

Table 1: Survey Reports within the Project area……..…….... 15
Table 2: Resources within the Project area……..……... 15
Table 3: Survey Reports within 0.5 Mile of the Project area…….. 16
Table 4: Resources within 0.5 Mile of Project area…… 16
Table 5: Isolates Recorded within the Project area……. 21

APENDICIES

Appendix A: Records Search from Southern San Joaquin Valley Information Center…….... 45
Appendix B: Sacred Lands File & Native American Contacts List Request……... 55
Appendix C: Feature and Isolate Forms…….…..…… 72
Appendix D: Staff Resumes……. 87

1.0 Introduction

This report details the results of a Phase 1 Cultural Resources Assessment in support of the proposed housing development on 59.13-acres in Visalia, California, on Accessor Parcel Numbers (APNs) 087-010-006 and 087-010-008 (Figures 1-3). This Phase 1 report is prepared pursuant to the California Environmental Quality Act (CEQA), PRC Sections 21082, 21083.2, and 21084.1, and California Code of Regulations 15064.5.

Heather Froshour completed the archival review, the Native American consultation, field survey, and prepared this Phase 1 report. Ms. Froshour is Soar Environmental's Senior Archaeologist who meets the professional standards of the U.S. Secretary of the Interior for archaeology (36 CFR 61) and is certified by the Register of Professional Archaeologists.

Soar Environmental requested a records search from the Southern San Joaquin Valley Information Center (SSJVIC) for the Project area as well as a 0.50-mile buffer. The archival research for this Phase 1 report was positive for archaeological sites or historical resources within the Project area. The archival record search reported two (2) recorded resources within 0.5-mile radius of the Project area. The records search revealed two (2) previous cultural resources surveys had been conducted in the Project area. A total of seven (7) additional cultural resource survey reports have been completed within a 0.50-mile radius of the Project area.

As part of the background research, Soar Environmental also requested a search of the Sacred Lands File (SLF) from the Native American Heritage Commission (NAHC). The results of the records review and SLF search were negative. The NAHC suggested contacting five (5) individuals representing three (3) Native American tribal groups to find out if they have additional information about the Project area. Soar Environmental sent outreach letters to all five (5) recommended tribal individuals. No response was received.

Soar Environmental conducted an intensive pedestrian survey of the project on November 18, 2023. No prehistoric resources of any kind were identified within the Project area. The current study however resulted in the documentation of one historical-period resource within the Project footprint: a segment of the nineteenth century South Fork Persian Ditch. The ditch was created by the Persian Ditch Company between 1854 and 1856 to transport water from Mill Creek for irrigation purposes. The ditch serves as a short distributary for the Persian Ditch to the north and the Watson Ditch to the south. The course of the South Fork Persian Ditch has changed subsequently and no longer maintain integrity from its original location. The ditch also now lacks integrity of setting, design, materials, feeling and association. As common property types lacking integrity, it is recommended as not eligible for listing in the California Register of Historical Resources (CRHR). Based on these findings, the development of the 4Creeks Elliot (San Joaquin Valley Housing) SJVH Project will not result in adverse impacts to know significant or unique resources as defined by CEQA. It is recommended, however, in the event that cultural resources are encountered during construction activities associated with the Project, a qualified archaeologist shall be obtained to assess the significance of the find in accordance with the criteria set forth in CEQA Guidelines 15064.5(f). In addition, Health and Safety Code 7050.5, CEQA 15064.5(e), and Public Resources Code 5097.98 mandate the process to be

followed in the unlikely event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

1.1 Project Description

The Project proposes the construction of a 224-unit housing subdivision at the southeast corner of Tulare Avenue and Shirk Road, in the city of Visalia (Figures 1-4). The proposed construction lies within the combined 59.13-acre parcels, APNs 087-010-006 and 087-010-008. The Project Site also has 4.24-acres allocated to the development of a park dedicated to the city (Figure 4). Grading of the area will be accomplished using a backhoe and grader.

The project will require the development of roads and sidewalks around and throughout the property. A stormwater retention basin will be maintained in the southwest corner of the Project Site for all on site drainage. On the east side of the property bounded by Roeben Street, 3 existing overhead powerlines will be undergrounded, and 5 powerline poles on the Shirk Road boundary will be relocated. Since the entire property will be graded for the housing project during construction activities, the trees in the northwest section of the property would be removed. Much of the property has been used for agricultural production and the entire lot has been cleared and maintained aside from the scattered trees (Figures 5-15).

1.2 Existing Condition

The Project area is located on two parcels of 59.13-acres combined located approximately 0.77-kilometers south from Highway 198, Visalia, California, at Accessor Parcel Numbers (APNs) 087-010-006 and 087-010-008 (Figure 1-4). The Project area is approximately 1.40-kilometers south from Mill Creek. The Project area is located in Tulare County within Section 34, Township 18S, Range 24E, Mount Diablo Base Meridian, as depicted on the Visalia, CA 7.5' U. S Geological Survey (USGS) topographical quadrangle (Figures 1). Surface soils consist primarily of the Akers soil series within the east and the Nord soil series within the west half of the Project area (Figure 3). The Akers soil series is typically very deep, well-drained, and formed in alluvium derived from granite rock. This soil is made up of light brownish gray sandy loam at surface with pale brown fine sandy loam below. The Nord soil series is typically very deep, well-drained, and formed in mixed alluvium dominantly from granite and sedimentary rocks. This soil is made up of grayish brown fine sandy loam at surface with brown fine sandy loam below. The elevation of the Project area ranges from 301-304 feet (ft) above mean sea level.

2.0 REGULATORY SETTING

Federal, State and local governments have developed laws and regulations designed to protect significant cultural resources that may be affected by actions that they undertake or regulate. The National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA) and the California Environmental Quality Act (CEQA) are the basic federal and state laws governing preservation of historic and archaeological resources of national, regional, State and local significance.

2.1 Federal

Federal regulations for cultural resources are governed primarily by Section 106 of the National Historic Preservation Act (NHPA) of 1966. Section 106 of NHPA requires Federal agencies to take into account the effects of their undertakings on historic properties and affords the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. The Council's implementing regulations, "Protection of Historic Properties" are found in 36 Code of Federal Regulations (CFR) Part 800. The goal of the Section 106 review process is to offer a measure of protection to sites which are determined eligible for listing on the National Register of Historic Places. The criteria for determining National Register eligibility are found in 36 CFR Part 60. Amendments to the NHPA (1986 and 1992) and subsequent revisions to the implementing regulations have, among other things, strengthened the provisions for Native American consultation and participation in the Section 106 review process. While federal agencies must follow federal regulations, most projects by private developers and landowners do not require this level of compliance. Federal regulations only come into play in the private sector if a project requires a federal permit or if it uses federal money.

2.2 State

California Register of Historical Resources

In California, the term "historical resource" includes "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (California PRC § 5020.1[j])(State of California 2021). In 1992, the California legislature established the California Register of Historical Resources (CRHR) "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (California PRC § 5024.1(a)). The criteria for listing resources on the CRHR, enumerated in the following text, were developed to be in accordance with previously established criteria developed for listing in the NRHP. According to California PRC § 5024.1(c) (1– 4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

2) Is associated with the lives of persons important in our past.

3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

4) Has yielded, or may be likely to yield, information important in prehistory or history

To understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (14 CCR 4852[d][2]).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the National Register of Historic Places (NRHP), and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

California Health and Safety Code, §7050.5

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. California Health and Safety Code, §7050.5, requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains can occur until the County Coroner has examined the remains (California Health and Safety Code, §7050.5b). California PRC §5097.98, also outlines the process to be followed in the event that remains are discovered. If the County Coroner determines or has reason to believe the remains are those of a Native American, the County Coroner must contact the California NAHC within 24 hours (California Health and Safety Code, §7050.5c)(State of California 2021). The NAHC will notify the most likely descendant. With the permission of the landowner, the most likely descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the most likely descendant by the NAHC. The most likely descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains, and items associated with Native Americans.

California State Assembly Bill 52

Assembly Bill (AB) 52 of 2014 amended California PRC § 5097.94, and added California PRC §21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 established that tribal cultural resources must be considered under CEQA and also provided for additional Native American consultation requirements for the lead agency. California PRC §21074, defines tribal cultural resources as follows:

(a) Section 21074 of the Public Resources Code states that "tribal cultural resources" are either of the following:

> (1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
>
> (A) Included or determined to be eligible for inclusion in the California Register

of Historical Resources.

(B) Included in a local register of historical resources as defined in subdivision (k) of §5020.1.

(2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of §5024.1. In applying the criteria set forth in subdivision (c) of §5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe. A cultural landscape that meets the criteria of subdivision:

(a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

(b) A historical resource described in §21084.1, a unique archaeological resource as defined in subdivision (g) of §21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of §21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

AB 52 formalizes the lead agency–tribal consultation process, requiring the lead agency to initiate consultation with California Native American tribes located on the contact list maintained by the Native American Heritage Commission (NAHC). This includes California Native American groups that are traditionally and culturally affiliated with the project, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report (EIR).

Section 9 of AB 52 establishes that "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment." Section 6 of AB 52 added §21080.3.2 to the California PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American tribe requests consultation regarding Project alternatives, mitigation measures, or significant effects to tribal cultural resources, the consultation shall include those topics (California PRC §21080.3.2[a]). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (California PRC §21082.3[a]).

Native American Human Remains

State law (California PRC §5097 et seq.) addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are

discovered during construction of a project; and established the NAHC.

In the event that Native American human remains, or related cultural material are encountered, §15064.5(e) of the CEQA Guidelines (as incorporated from PRC §5097.98) and California Health and Safety Code, §7050.5, defines the subsequent protocol. In the event of the accidental discovery or recognition of any human remains, excavation or other disturbances shall be suspended on the site, or any nearby area reasonably suspected to overlie adjacent human remains or related material. Protocol requires that the County Coroner or County-approved Coroner represented be contacted in order to determine if the remains are of Native American origin. Should the coroner determine the remains to be Native American, the coroner must contact the NAHC within 24 hours. The most likely descendant may make recommendations to the landowner or the person responsible for the excavation work for means of treating, with appropriate dignity, the human remains, and any associated grave goods as provided in California PRC §5097.98 (14 CCR 15064.5(e))(State of California 2021).

2.3 Local

Tulare County

Chapter 8.6 of the Tulare County General Plan of 2012 promotes the preservation of cultural and historic resources through managing and protecting sites of cultural and archeological importance for the benefit of present and future generations (County of Tulare 2012). Some of the measures implemented by the County are:

> **ERM-6.1 Evaluation of Cultural and Archaeological Resources**
> The County shall participate in and support efforts to identify its significant cultural and archaeological resources using appropriate State and Federal standards.
>
> **ERM-6.2 Protection of Resources with Potential State or Federal Designations**
> The County shall protect cultural and archaeological sites with demonstrated potential for placement on the National Register of Historic Places and/or inclusion in the California State Office of Historic Preservation's California Points of Interest and California Inventory of Historic Resources. Such sites may be of Statewide or local significance and have anthropological, cultural, military, political, architectural, economic, scientific, religious, or other values as determined by a qualified archaeological professional.
>
> **ERM-6.3 Alteration of Sites with Identified Cultural Resources**
> When planning any development or alteration of a site with identified cultural or archaeological resources, consideration should be given to ways of protecting the resources. Development can be permitted in these areas only after a site specific investigation has been conducted pursuant to CEQA to define the extent and value of resource, and mitigation measures proposed for any impacts the development may have on the resource.

ERM-6.4 Mitigation
If preservation of cultural resources is not feasible, every effort shall be made to mitigate impacts, including relocation of structures, adaptive reuse, preservation of facades, and thorough documentation and archival of records.

ERM-6.5 Cultural Resources Education Programs
The County should support local, State, and national education programs on cultural and archaeological resources.

ERM-6.6 Historic Structures and Sites
The County shall support public and private efforts to preserve, rehabilitate, and continue the use of historic structures, sites, and parks. Where applicable, preservation efforts shall conform to the current Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings.

ERM-6.7 Cooperation of Property Owners
The County should encourage the cooperation of property owners to treat cultural resources as assets rather than liabilities, and encourage public support for the preservation of these resources.

ERM-6.8 Solicit Input from Local Native Americans
The County shall continue to solicit input from the local Native American communities in cases where development may result in disturbance to sites containing evidence of Native American activity and/or to sites of cultural importance.

ERM-6.9 Confidentiality of Archaeological Sites
The County shall, within its power, maintain confidentiality regarding the locations of archaeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts.

ERM-6.10 Grading Cultural Resources Sites
The County shall ensure all grading activities conform to the County's Grading Ordinance and California Code of Regulations, Title 20, § 2501 et. seq..

City of Visalia

Under Chapter 3, the City's Role and Tools for Preservation, in the General Plan of the City of Visalia defines a "cultural resources" as:

Chapter 3.3: Sites, structures, or any other physical evidence associated with human activity considered important to be culturally important. This includes archaeological resources and contemporary Native American resources in addition to the historic resources that are the subject of this chapter. Impacts of development on cultural resources of all kinds must be avoided to the

greatest extent possible, as described by policies in Chapter 6: Open Space and Conservation.

Under Chapter 6, Open Space and Conservation, within the General Plan of the City of Visalia the following policies are outlined for the preservation of cultural resources:

Chapter 6.5: OSC-P-39 Establish requirements to avoid potential impacts to sites suspected of being archeologically, paleontologically, or historically significant or of concern, by:

- Requiring a records review for development proposed in areas that are considered archaeologically or paleontologically sensitive.

- Determining the potential effects of development and construction on archaeological or paleontological resources (as required by CEQA).

- Requiring pre-construction surveys and monitoring during any ground disturbance for all development in areas of historical and archaeological sensitivity.

- Implementing appropriate measures to avoid the identified impacts, as conditions of project approval.

In the event that previously unidentified historical, archaeological, or paleontological resources are discovered during construction, grading activity in the immediate area shall cease and materials and their surroundings shall not be altered or collected. A qualified archaeologist or paleontologist must make an immediate evaluation and avoidance measures, or appropriate mitigation should be completed, according to CEQA Guidelines. The State Office of Historic Preservation has issued recommendations for the preparation of Archaeological Resource Management Reports that will be used as guidelines. (City of Visalia 2014).

3.0 SETTING

This section of the report summarizes information regarding the physical and cultural setting of the Project area, including prehistoric, ethnographic, and historic contents of the general area. Several factors; including topography, biological resources, and available water sources; affect the nature and distribution of the cultural periods of activity of an area. This background provides a context for understanding the nature of the cultural resources that may be identified within the region of the project.

3.1 Environmental Setting

The Project area is located in west Tulare County, approximately 5.3 miles north-northwest of Tulare, California within the San Joaquin Valley. The San Joaquin Valley is a long, narrow, northwest-trending, alluvial valley that lies between the Sierra Nevada Range to the east, and the Coast Ranges to the west (Wagner, 2002). The region was historically covered with native annual and perennial grasses including San Joaquin saltbush, valley oak savanna, riparian forest, and tule marsh (McNab and Avers, 1996; Munz and Keck, 1973). The climate consists of hot,

dry summers with cool, moist winters that provide the best climate for the neighboring pomegranate and citrus orchards and vineyards.

The Project area is best characterized historically as a rural ranching and agricultural region with large populations of both large and small mammals. Prehistorically, the larger mammals inhabiting the Project area would have included mule deer (*Odocoileus hemionus californicus*), black-tailed deer (*O. hemionus columbianus*), tule elk (*Cervus elaphus nannoides*), pronghorn antelope (*Antilocarpa Americana*), mountain lion (*Felis concolor*), and black bear (*Ursus americanus*) (Jameson and Peeters 1988). The small mammals that historically inhabited the Project area included rabbit (*Sylvilagus sp*.), black-tailed jackrabbit (*Lepus californicus*), western gray squirrel (*Sciurus griseus*), coyote (*Canis latrans*), and gray fox (*Urocyon cinereoargenteus*).

The Project site is currently being used for agricultural production and the entire lot has been cleared and maintained aside from several scattered trees.

3.2 Cultural Setting

Cultural resources include prehistoric-era archaeological sites, historic-era archaeological sites, Native American traditional cultural properties, sites of religious and cultural significance, and historical buildings, structures, objects, and sites. The importance of any single cultural resource is defined by the context in which it was first created, current public opinion and modern yet evolving analysis. From the analytical perspective, temporal and geographic considerations help to define the historical context of the Project area. The importance or significance of a cultural resource is in part described by the context in which it originated or developed. National Park Service Bulletin 16a (1997) describes a historic context as "information about historic trends and properties grouped by an important theme in prehistory or history of a community, state, or the nation during a particular period of time." A context links an existing property to important historic trends, and this allows a framework for determining the significance of a property. Given this, a major goal of the historian is to determine accurate themes of analysis, a task that can only be undertaken by a thorough review of previous researchers' thoughts and ideas, as well as reviewing the literature of the resources.

In California, historians have divided the past into broad categories based on climate models, archaeological dating and written histories. Paleontologists divide time into much larger segments, with defined and named periods of time shortening in timespan as the modern era is reached. For the purposes of this analysis, these periods in history have been summarized below.

3.2.1 Prehistoric Setting

During the Early Holocene epoch (9700 to 4000 B.C.), large game hunting societies populated the area. Culturally significant surface finds in the Tulare Basin have yielded some projectile points similar to particular Paleoindian varieties (i.e., Western Clovis), suggesting an initial occupation pre-dating approximately 11,300 years before present (B.P.). The Middle Holocene epoch (4000 to 1000 B.C.) is characterized by Pinto-like points and groundstone tools, although

the association between the epoch and specific societies is not certain.

Olsen and Payen (1968) developed a chronology of four temporally distinct complexes for sites found within the southern San Joaquin Valley. The first complex, the Positas Complex, ranges from 3300 to 2600 B.C. and is characterized by small, shaped mortars, short cylindrical pestles, milling stones, perforated flat cobbles, and sea snail shell beads. The second complex is the Pacheco Complex which ranges from approximately 2600 B.C. to 300 A.D. This complex is divided into Phase B and Phase A. Phase B ranges from 2600 B.C. to 1600 B.C. and is characterized by biface arrow points, abalone shell ornaments, and sea snail shell beads. Phase A ranges from 1600 B.C. to 300 A.D. and is represented by more variation in shell bead types, perforated canine teeth, bone awl, whistles, grass saws, large stemmed and side-notched points, and an abundance of milling stones, mortars, and pestles. The third complex, the Gonzaga Complex, ranges from 300 to 1000 A.D. and is characterized by extended burials, bowl mortars, shaped pestles, squared and tapered stem projectile points, bone awls, grass saws, and a shell industry composed of distinctive shell ornaments and beads. Lastly, the Panoche Complex ranges from 1500 A.D. to European contact (mid to late 1700 A.D.) and is characterized by the presence of fewer milling stones, varied mortars and pestles, small side-notched arrow points, clamshell disc beads, bone awls, whistles, saws, and tubes.

3.2.2 Ethnographic Setting

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. Ethnographic information about the Yokuts was collected primarily by Powers (1971, 1976 [originally 1877]), Kroeber (1925), Gayton (1930, 1948), Driver (1937), Latta (1977) and Harrington (n.d.). For a variety of historical reasons, existing research information emphasizes the central Yokuts tribes who occupied both the valley and particularly the foothills of the Sierra. The northernmost tribes suffered from the influx of Euro-Americans during the Gold Rush and their populations were in substantial decline by the time ethnographic studies began in the early twentieth century. In contrast, the southernmost tribes were partially removed by the Spanish to missions and eventually absorbed into multi-tribal communities on the Sebastian Indian Reservation (on Tejon Ranch), and later the Tule River Reservation and Santa Rosa Rancheria to the north. The result is an unfortunate scarcity of ethnographic detail on southern Valley tribes, especially in relation to the rich information collected from the central foothills tribes where native speakers of the Yokuts dialects are still found. Regardless, the general details of indigenous lifeways were similar across the broad expanse of Yokuts territory, particularly in terms of environmentally influenced subsistence and adaptation and with regard to religion and belief, which were similar everywhere.

This scarcity of specific detail is particularly apparent in terms of southern valley tribal group distribution. The San Joaquin Valley floor, and thus the study area, was occupied by these southern Valley Yokuts speakers, themselves divided into a series of autonomous “tribelets,” the boundaries of which are not well defined. The Yauelmani Yokuts lived from the Kern River area, in modern Bakersfield, to the southeast corner of the valley, on the Tejon Ranch, thus likely including the study area. The Hometwali were centered around Kern Lake, while the Tulamni occupied the west side of Buena Vista Lake and the foothills of the Temblors, at least to

McKittrick. The Tuhohi resided from the Kern River delta north to the Goose Lake area and west to the sloughs near Buttonwillow. Yokuts villages apparently extended up to, but not into, the mouths of the canyons on the northern and western fronts of the Tehachapi Mountains, well into the foothills and lower elevations of the Sierra Nevada on the east, and to the crest of the Temblor Range on the west. The Yokuts are Penutian speakers and are linguistically related to northern occupants of the San Joaquin Valley.
The Yokuts settlement pattern was largely consistent, regardless of specific tribe involved. Winter villages were typically located along lakeshores and major stream courses (as these existed circa AD 1800), with dispersal phase family camps located at elevated spots on the valley floor and near gathering areas in the foothills.

Most Yokuts groups, again regardless of specific tribal affiliation, were organized as a recognized and distinct tribelet; a circumstance that almost certainly pertained to the tribal groups noted above. Tribelets were land-owning groups organized around a central village and linked by shared territory and descent from a common ancestor. The population of most tribelets ranged from about 150 to 500 peoples (Kroeber 1925).

Each tribelet was headed by a chief who was assisted by a variety of assistants, the most important of whom was the winatum, a herald or messenger and assistant chief. A shaman also served as religious officer. While shamans did not have any direct political authority, as Gayton (1930) has illustrated, they maintained substantial influence within their tribelet.

Shamanism is a religious system common to most Native American tribes. It involves a direct and personal relationship between the individual and the supernatural world enacted by entering a trance or hallucinatory state (usually based on the ingestion of psychotropic plants, such as jimsonweed or more typically native tobacco). Shamans were considered individuals with an unusual degree of supernatural power, serving as healers or curers, diviners, and controllers of natural phenomena (such as rain or thunder). Shamans also produced the rock art of this region, depicting the visions they experienced in vision quests believed to represent their spirit helpers and events in the supernatural realm (Whitley 1992, 2000).

The centrality of shamanism to the religious and spiritual life of the Yokuts was demonstrated by the role of shamans in the yearly ceremonial round. The ritual round performed the same each year, started in the spring with the jimsonweed ceremony, followed by rattlesnake dance and (where appropriate) first salmon ceremony. After returning from seed camps, fall rituals began in the late summer with the mourning ceremony, followed by first seed and acorn rites and then bear dance (Gayton 1930:379). In each case, shamans served as ceremonial officials responsible for specific dances involving a display of their supernatural powers (Kroeber 1925).

Subsistence practices varied from tribelet to tribelet based on the environment of residence. Throughout Native California, and Yokuts territory in general, the acorn was a primary dietary component, along with a variety of gathered seeds. Valley tribes augmented this resource with lacustrine and riverine foods, especially fish and wildfowl. As with many Native California tribes, the settlement and subsistence rounds included the winter aggregation into a few large villages, where stored resources (like acorns) served as staples, followed by dispersal into

smaller camps, often occupied by extended families, where seasonally available resources would be gathered and consumed.

Although population estimates vary and population size was greatly affected by the introduction of Euro-American diseases and social disruption, the Yokuts were one of the largest, most successful groups in Native California. Cook (1978) estimates that the Yokuts region contained 27 percent of the aboriginal population in the state at the time of contact; other estimates are even higher. Many Yokuts people continue to reside in the southern San Joaquin Valley today.

3.2.3 Historic Setting

In California, the historic era is divided into three general periods: the Spanish or Mission Period (1769 to 1821), the Mexican or Rancho Period (1821 to 1848), and the American Period (1848 to present). The mission system, which ultimately established 21 missions between 1796 and 1822, consisted of missions, presidios, and pueblos, and was designed to convert the indigenous peoples of California to Christianity and assimilate them under Spanish rule (Gudde 1998).

The Spaniards were the first non-Indians to enter the San Joaquin Valley. Pedro Fages led a group of soldiers through Tejon Pass into the San Joaquin Valley in 1772 (Wallace 1978:459). In 1776, Spanish missionaries visited the area now known as Bakersfield; the event was documented by Franciscan friar Francisco Garcés. Father Garcés described the Kern River, which he named Rio de San Felipe, and visited the Yokuts community of Woilu, a village situated on the land modern Bakersfield would later occupy. While visiting Woilu, Father Garcés performed the first European baptism in the San Joaquin Valley. The Franciscans returned to their base at Mission San Gabriel following a route through the Tehachapi Mountains that functioned as the primary road until 1876, when the Southern Pacific Railroad created an alternate route.

Lieutenant Gabriel Moraga led a group of Spanish explorers into the San Joaquin Valley in 1806 (Clough and Secrest 1984:25–27). Moraga's party intended to locate new lands for missions, find and return runaway Indians, and relocate stolen livestock. Moraga is credited with naming both the Kings and San Joaquin rivers. By the early 1820s, the expansion of missions in California ceased as a result of Mexico's independence from Spain (Clough and Secrest 1984:26). In 1827, the 17-man expedition led by Jedediah Smith entered the region and signaled the earliest American presence in the Kern County area (Clark 1998). Smith's adventures included friendly encounters with the Southern Yokuts near the Kings River and trapping and camping along the San Joaquin River (Clough and Secrest 1984:27). After Smith's visit, other trappers followed until about 1837, by which time fur-bearing animals had been nearly exterminated from the valley.

Visalia, then called Four Creeks, was settled in 1852. In this same year Tulare County was officially formed from parts of Mariposa County. By 1858 Visalia was added to John Butterfield's Overland Stage route from St. Louis to San Francisco. In these early years Visalia was a used as a supply center for the nearby gold mining operations along the Kern River. During this time Visalia's agricultural economy was based predominantly around livestock. In

1872 the Southern Pacific Railroad constructed train tracks throughout the San Joaquin Valley, and with this a shift was triggered in Visalia's agricultural economy to one revolving around field crops. By 1874 Visalia was incorporated as a city in Tulare County. The next major economic change was brought about by the increased availability of irrigation water, resulting in the conversion of large grain fields to small farms, where citrus, grapes, olives, and deciduous fruits were raised. These crops are a mainstay of the region's economy today (City of Visalia 2023).

4.0 ARCHIVAL RECORDS SEARCH

4.1 South Central Coastal Information Center

The Project area is located in the USGS Visalia 7.5' Series Quadrangle (USGS 2021). On October 13, 2023, Soar submitted a records search request to the Southern San Joaquin Valley Information Center (SSJVIC) located at the California State University, Bakersfield (Appendix A). The records search included a 0.5-mile buffer around the Project area. The results from the records search indicate two (2) cultural resource studies have been conducted within the Project area (Table 1). According to the information on file, there is one (1) resource within the Project area (Table 2).

Table 1. Survey Reports within the Project area

Report No.	Year	Author(s)/ Affiliation	Title
TU-00041	1995	Self, William/ William Self Associated	Class I Overview, Santa Fe Pacific Pipeline Partners, L.P., Proposed Concord to Colton Pipeline Project
TU-01190	1957	Mitchell, Annie R./ Westernlore Press	Jim Savage and the Tulareño Indians

Table 2. Resources within the Project area

Primary #	Type	Description
P-54-002177	Structure	Nineteenth-century earthenware irrigation ditch, HP20

There are two (2) recorded resources within the 0.5-mile record search radius (Table 3). There were seven (7) reports identified within a 0.5-mile radius of the Project area (Table 4).

Table 3. Survey Reports within 0.5 Mile of the Project area

Report No.	Year	Author(s)/ Affiliation	Title
TU-00246	1979	Cantwell, R.J./ Individual Consultant	Archaeological and Historical Survey Report for the Walnut Avenue Extension from Watson Ditch Near Shirk Road to the Termination of Road 86, Visalia, California
TU-00247	1979	Cantwell, R.J./ California Department of Transportation	Historic Property Survey Report for the Extension of Walnut Avenue, Road A288 and Road 86, Approximately Two and a Half Miles of New Road, from Watson Ditch to Southern Terminus of Akers Road
TU-00960	1989	Chavez, David/ CH2M Hill, David Chavez & Associates	Historic Resources Evaluation Repot for a Proposed Freeway Project in Visalia
TU-00962	1990	Unknown/ CH2M Hill, David Chavez & Associates	Historic Property Survey Report for a Proposed Freeway Project in Visalia
TU-00963	1989	Chavez, David/ CH2M Hill, David Chavez & Associates	Archaeological Survey Report for a Proposed Freeway Project in Visalia
TU-00964	1989	Chavez, David/ CH2M Hill,	Historic Architectural Survey Report for the State Route 198 Draft Environmental Impact Report
TU-01006	1999	Binning, Jeanne and Chick, Phil/ California Department of Transportation	Negative Archaeological Survey Report to Perform Replacement Plan for Freeze Damage to landscaping Along Portions of State Route 198 In and Near Visalia

Table 4. Resources within 0.5 Mile of the Project area

Primary #	Type	Description
P-54-003667	Building	400 Block of Roeben Road - Two Residences and Associated Outbuildings on Roeben Road, ca. 1940s/1970s
P-54-003670	Building	Cottonwood Court Historic Residence, ca 1980s

There are no recorded cultural resources within the Project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, or the California State Historic Landmarks.

4.2 Sacred Lands File & Native American Contacts List Request

The California Native American Heritage Commission (NAHC) was contacted on October 13, 2023, to conduct a Sacred Lands File (SLF) search, and to obtain a list of tribes culturally and geographically affiliated with the Project area (Appendix B). On December 1, 2023, the NAHC indicated there are no Native American traditional cultural places or sacred sites within or near the Project area. The NAHC provided a list of five (5) Tulare County Native American groups and individuals affiliated with the local tribes. On December 4, 2023 Ms. Froshour sent letters to all individuals describing the location, and the nature of the project. In each letter, Ms. Froshour included a request for information regarding prehistoric, historic, ethnographic land use, as well as contemporary Native American values.

Soar Environmental did not receive comments from the Tulare County Native American groups or affiliated individuals regarding the proposed development at the project location.

4.3 National Register of Historic Places (NRHP) Eligibility Evaluation

Historical Context and Construction History

The South Fork Persian Ditch is located in west Visalia, California within the 3rd hydrologic unit of the Kaweah Delta Water Conservation District. The ditch branches off from Watson Ditch and flows south and west for approximately 2.5 miles before terminating at the Persian Ditch. Previous cultural resources surveys in the area indicate that the ditch was first visible on Thompson's 1892 map and first appears on USGS topographic maps in 1927. The ditch is visible on aerial photographs as early as 1956. Alignment of the South Fork Persian Ditch has changed since its original construction between 1854 and 1856 with a major shift noted on topo maps between 1942 and 1946 when the ditch was altered from its northeast to southwest alignment to a north to south alignment along the west side of South Roeben St and an east to west alignment once it reaches the area between West Tempe Ave and West Howard Court (Nationwide Environmental Title Research, LLC 2020). The northern-most portion of the ditch was more recently modified to a west to east alignment between 2003 and 2004 (Google Earth 2022).

Earthen Irrigation Ditches in the San Joaquin Valley

Settlers in the San Joaquin Valley were among the first farmers in California to put in utility works specifically designed for use in irrigation. During the late 1850s and 1860s these short, roughly made, earthen ditches diverted water by means of temporary brush dams constructed across the lower courses of the streams running west out of the Sierra. The earliest of these ditches were built in the vicinity of Visalia in 1852-1853 with the Persian Ditch being one of the earlier ditches constructed in 1854 and the nearby Watson Ditch between 1855 and 1856 (Mitchell 1974). Other irrigation ditches spread out through the Kaweah River and Kings River deltas throughout the 1860s. Many of these early irrigation ditch systems were destroyed by the great floods of 1862 and 1868, despite these losses the San Joaquin Valley farmers continued to experiment with irrigation methods. By 1870, most of the approximately 60,000 irrigated acres in California were small diversions in Southern California and irrigation from former mining

ditches in the Sierra foothills. Farmers had also begun to irrigate bottom lands along the streams in the southern San Joaquin Valley (Pisani 1984). In the first decades of the twentieth century, many private enterprise irrigation systems in the San Joaquin Valley, as in Southern California, were acquired by irrigation districts formed by local residents (Adams 1929). The most common absorption occurred when local citizens formed an irrigation district covering the area served, and then purchased the commercial canals serving it. After irrigation districts took over in the 1910s and 1920s in the San Joaquin Valley, they typically replaced the wooden headgates, control structures, and diversion works with concrete structures (Jelinek 1982). Many canals remain earth lined, however, although areas with high seepage losses or problems with high groundwater tables installed linings in their originally earth-lined conduits.

Period of Significance

The ditch was constructed between 1854 and 1856 by farmers and other water users holding stock in what is now the Persian Ditch Company, created in ca. 1936, to transport water from Mill Creek for irrigation purposes. If eligible, the South Fork Persian Ditch would have a period of significance from approximately 1854 to present. This date range is based on historic maps of the City of Visalia and Tulare County.

Significance

South Fork Persian Ditch is potentially significant under **Criterion A.** The ditch is a mostly unlined earthenware irrigation ditch used by the city of Visalia. The ditch does not represent a unique association with agricultural activities at the local, state, or national levels. The ditch is associated with events that have made a significant contribution to the broad patterns of our history as part of the earliest irrigation ditch systems in Visalia. South Fork Persian Ditch is not significant under **Criterion B**. because the ditch is not associated with the lives of significant persons in our past. The design and construction, as well as modifications, were not by any one individual or individuals in the city of Visalia with particular significance at the local, state, or national levels. South Fork Persian Ditch is not significant under **Criterion C**. because the use of the earth in the construction of irrigation ditches has been common for over 150 years in the region and has been used since the planting of agricultural fields in Visalia. The ditch does not embody the distinctive characteristics of a type, period, or method of construction, nor does it represent the work of a master, possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction. The ditch is constructed of common materials and has been repaired and modified using typical methods and technologies. South Fork Persian Ditch is not significant under **Criterion D**. because the ditch is not a significant or likely source of important information about the construction of irrigation ditches, agricultural fields, or the materials or technologies employed in their construction and operation.

Integrity

The South Fork Persian Ditch is potentially significant under Criterion A and not significant under Criteria B-D. The ditch, however, have experienced changes in its alignment, alterations to

its immediate and landscape surroundings (including suburbanization along certain of their segments and the construction of modern bridge crossings), and the replacement of its original water control features with modern equipment (such as concrete culverts and metal gates). The ditch therefore lacks integrity of original location, setting, design, materials and feeling and it cannot convey its historical association and is therefore not eligible for the NRHP. Integrity of location design, materials, and workmanship, setting, feeling, and association is relatively low within the period of significance.

Determination of Eligibility

In view of this analysis, SOAR finds the South Fork Persian Ditch lacks significance and is not eligible for the NRHP.

Finding of Effect

The proposed Project is a 224-unit housing subdivision in Tulare County. The South Fork Persian Ditch is not NRHP eligible. The Project area is not located within any known historic districts or landscapes. The proposed construction would be limited to the 59.13-acre property, in addition to the 4.15 acres allocated to the development of a park dedicated to the City. As a result, SOAR finds *No Historic Properties Affected* (800.4[d][1]) for this undertaking.

5.0 PREVIOUS DISTURBANCES IN THE PROJECT AREA

The Project area is located within an area that has undergone anthropogenic modifications, primarily from activities related to residential development and agricultural activities. Likewise, the surface of the Project area has undergone surface grading and intense subsurface disturbance from previous residential construction and agricultural plowing. In some cases, the graded surface could exceed 24 inches (60 centimeters). This disturbance could exceed 5 feet (1.524 meters) in some areas.

In summary, the following previous disturbances have occurred within or immediately adjacent to the Project area:

- Surface grading and maintenance of current and historic roads
- Subsurface plowing, tilling, and harvesting due to agricultural activities
- Surface grading and subsurface disturbance for main building, outbuilding construction.

6.0 FIELD SURVEY METHODS AND RESULTS

The basic criteria for determining the presence of prehistoric and historic cultural resources in local urban and rural settings generally includes:

- Presence of flaking debris derived from stone tool manufacturing
- Presence of marine shell and/or other faunal remains
- Occurrence of material culture artifacts
- Surface expressions of cultural features
- Bedrock mortars and related milling features/components
- Soil discolorations or atypical soil manifestations
- Stone/adobe features associated with structural remains
- Diagnostic ceramics derived from Spanish, Mexican, or later periods
- Historic iron and glassware, cans, privy pits, domestic occupational debris

This investigation included the following tasks:

- Review of regional history and previous cultural resource sites and studies within the Project area and the vicinity.
- Examination of archival topographic maps and aerial photographs for the Project area and the general vicinity.
- Request of a California Historical Resources Information System data request of the Project area and 0.50-mile radius through the Southern San Joaquin Valley Information Center.
- Request of a NAHC Sacred Lands File Search for the Project area and 0.50-mile radius. Contact with Tribal groups and individuals as named by the NAHC.
- Evaluate the potential for the proposed Project to result in significant impacts to cultural resources including the potential to impact buried cultural resources with no surface expression.
- Intensive Phase 1 pedestrian survey with transect intervals of 50 feet (15 meters) of the Project area.
- Develop recommendations associated with impacts to cultural resources following the guidelines as outlined in the Regulatory Setting.

Ms. Froshour conducted the field survey of the Project area on November 18, 2023. The Project area was examined by systematic pedestrian inspection of the ground surface. Transect intervals

varied from 50 feet (15 meters). Disturbances immediately adjacent to the Project area were also examined for primary and secondary surface archaeological indicators.

The approximately 59.13-acre Project area consists mostly of undeveloped agricultural fields (Figures 5-15). Irrigation ditches, dirt roads, and contemporary irrigation features (e.g., standing pipes, culverts, pumps) exist within the Project footprint. The surface visibility of the Project area, defined as the approximate percentage of native soils visible during field survey of a given project component, was estimated at 90-100% within the Project area. The ground surface was covered by approximately 53.53-acres of active agricultural land with tree groves covering 5.6 acres, comprised of approximately 30 valley oaks (*Quercus lobata*), in the northwestern portion of the property (Figure 15).

No prehistoric cultural resources were identified within the Project area as a result of the intensive pedestrian survey. However, one (1) nineteenth-century irrigation ditch was identified within the Project area: the South Fork Persian Ditch was previously recorded in 1995 and again in 2022.

South Fork Persian Ditch

This resource is a short segment of the nineteenth century South Fork Persian Dith located on valley flats within the city limits of Visalia. The recorded segment measures approximately 518 feet long by 15 feet wide by 4 feet deep and is situated at an elevation range between 305 feet and 306 feet above sea level. During the current investigation, Soar Environmental investigated only that portion of the linear resource within the Project area, which runs in an east-west direction for approximately 0.75 mi. The ditch is earthen in construction and has contemporary irrigation features associated with it (i.e., concrete culverts, corrugated sheet metal culverts, sluice gates).

The ditch was constructed between 1854 and 1856 by farmers and other water users holding stock in what is now the Persian Ditch Company, created in ca. 1936, to transport water from Mill Creek for irrigation purposes. The ditch serves as a short distributary for the Persian Ditch to the north and the Watson Ditch to the south. The course of the South Fork Persian Ditch has changed subsequently between 1942 and 1946 as evidenced on USGS topographic quadrangles, and no longer maintain integrity from its original location. No artifacts or related cultural materials of any kind were observed on or immediately adjacent to the ditch. The resource is in good condition; however, it lacks integrity to its period of construction due to decades of agricultural activities, ditch modifications, and road maintenance. The ditch also now lacks integrity of setting, design, materials, feeling and association. As common property types lacking integrity, it is recommended as not eligible for listing in the California Register of Historical Resources (CRHR). Based on these findings, the development of the 4Creeks Elliot SJVH Project will not result in adverse impacts to know significant or unique resources as defined by California Environmental Quality Act CEQA.

In addition, three (3) isolate isolated ceramic sherds potentially derived from a primary or secondary archaeological context were observed on the surface of the Project area (Table 5).

Table 5. Isolates Recorded within the Project area

Isolate #	Type	Description
IF-01-2023	Ceramic	Refined earthenware, white glaze with blue band, thick possible serving dish/platter sherd
IF-02-2023	Ceramic	Refined earthenware body sherd, cream/yellow colored glaze
IF-03-2023	Ceramic	Refined earthenware sherd, light cream-colored glaze, possible platter sherd

In summary, one (1) existing *in situ* cultural resource was observed on the surface of the Project area, a nineteenth-century irrigation ditch associated with irrigation systems throughout the City of Visalia, with three (3) isolated ceramic sherds observed on the surface of the Project area.

7.0 RECOMMENDED ACTIONS AND MITIGATION MEASURES

There appears to be a moderate possibility for subsurface cultural resources in the Project area, based on the results of the archival research, and the fact that one (1) known resource have been detected during previous disturbances within the Project area. There are no recorded cultural resources within the 0.5-mile buffer radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, or the California State Historic Landmarks. No site testing or mitigation measures are recommended or required, unless previously undiscovered cultural resources are detected during construction.

The intensive Phase I pedestrian survey was conducted on November 18, 2023, with parallel transects spaced at 50 feet (15-meter) intervals walked across the entire Project area. No prehistoric resources were identified, but segments of one (1) nineteenth-century irrigation ditch was documented within the Project area: the South Fork Persian Ditch. The ditch dates from 1854 – 1856 and reflects the establishment of an irrigation system in this portion of Tulare County. It thus could be potentially eligible for CRHR listing due to its association with this important historic event (CRHR Criterion 1). It has no known association with an important historical figure (CRHR Criterion 2) and, as common property types, is not notable in terms of design, materials, or engineering (CRHR Criterion 3). It also lacks research value not better provided by historical records and documents (CRHR Criterion 4).

The ditch, however, has experienced changes in its alignment, alterations to its immediate and landscape surroundings (including suburbanization along certain of their segments and the construction of modern bridge crossings), and the replacement of its original water control features with modern equipment (such as concrete culverts and metal gates). The ditch therefore lacks integrity of original location, setting, design, materials and feeling and it cannot convey its historical association.

The South Fork Persian Ditch is recommended as not CRHR eligible, and it does not constitute significant or unique historical resources under CEQA due to its lack of integrity. No other cultural resources of any kind were identified during a Phase I study of the Project area. The proposed 4 Creeks Elliot SJVH Project therefore does not have the potential to result in adverse impacts to know historical properties.

A potential always exists to encounter previously undetected cultural resources. If cultural materials (prehistoric and/or historic artifacts) are detected during the course of ground disturbances associated with this project, all work in the immediate area of the find shall be halted until a qualified archaeologist can inventory and assess the significance of the find(s). At that point, the resources shall be evaluated in accordance with the procedures set forth in the California Environmental Quality Act (CEQA) 21083.2, sections 15064.5 and 15126.4, and the criteria regarding resource eligibility to the California Register of Historic Resources (CRHR).

If a resource cannot be avoided, then the resource must be examined vis-à-vis the provisions in the County Guidelines, and CEQA Sections 15064.5 and 15126.4 and the eligibility criteria as an "important" or "unique archaeological resource", as appropriate. In many cases, determination of a resource's eligibility can only be made through extensive research and archaeological testing.

Human remains are addressed by State of California Health and Safety Code Section 7050.5. This code section states that no further disturbance shall occur until the County Coroner has made a determination of the origin and disposition of the remains, pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the human remains are determined to be prehistoric/ethnohistoric Native American remains, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendent (MLD). The MLD shall complete the inspection of the site within 24 hours of notification, and may potentially recommend scientific removal, reburial, nondestructive analysis of human remains, and/or specific treatment of associated burial goods.

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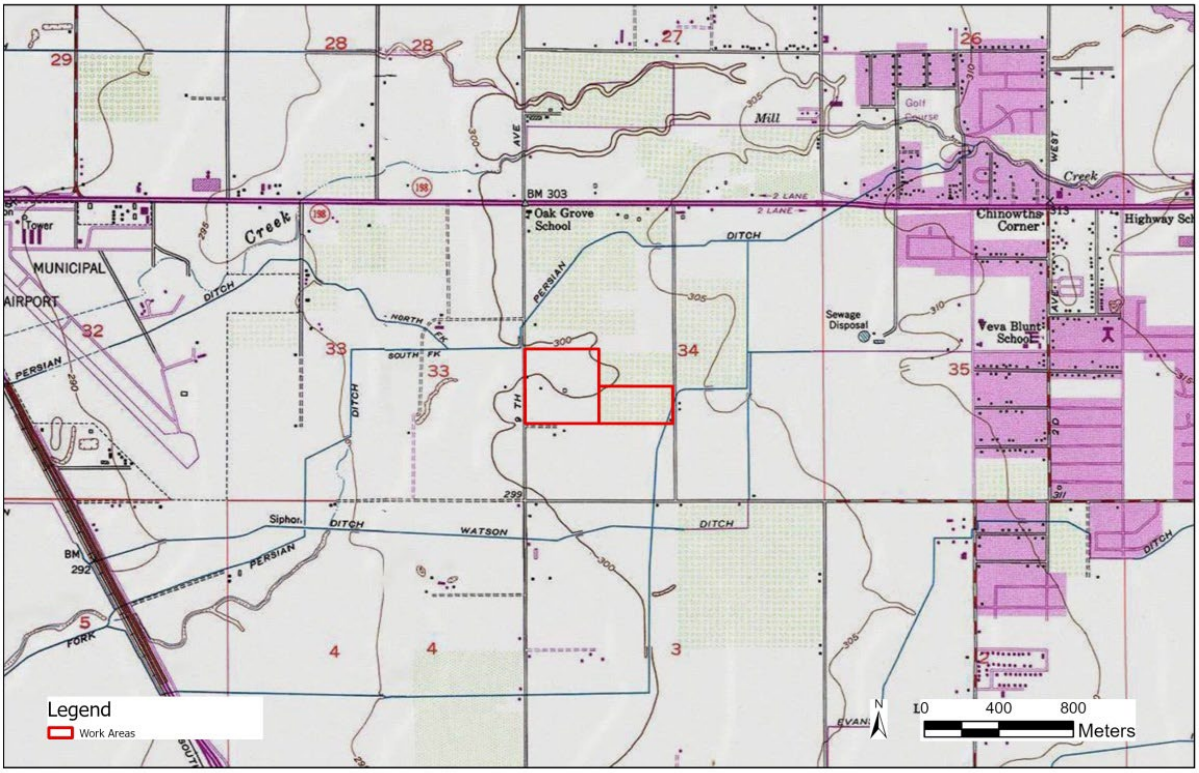
FIGURES

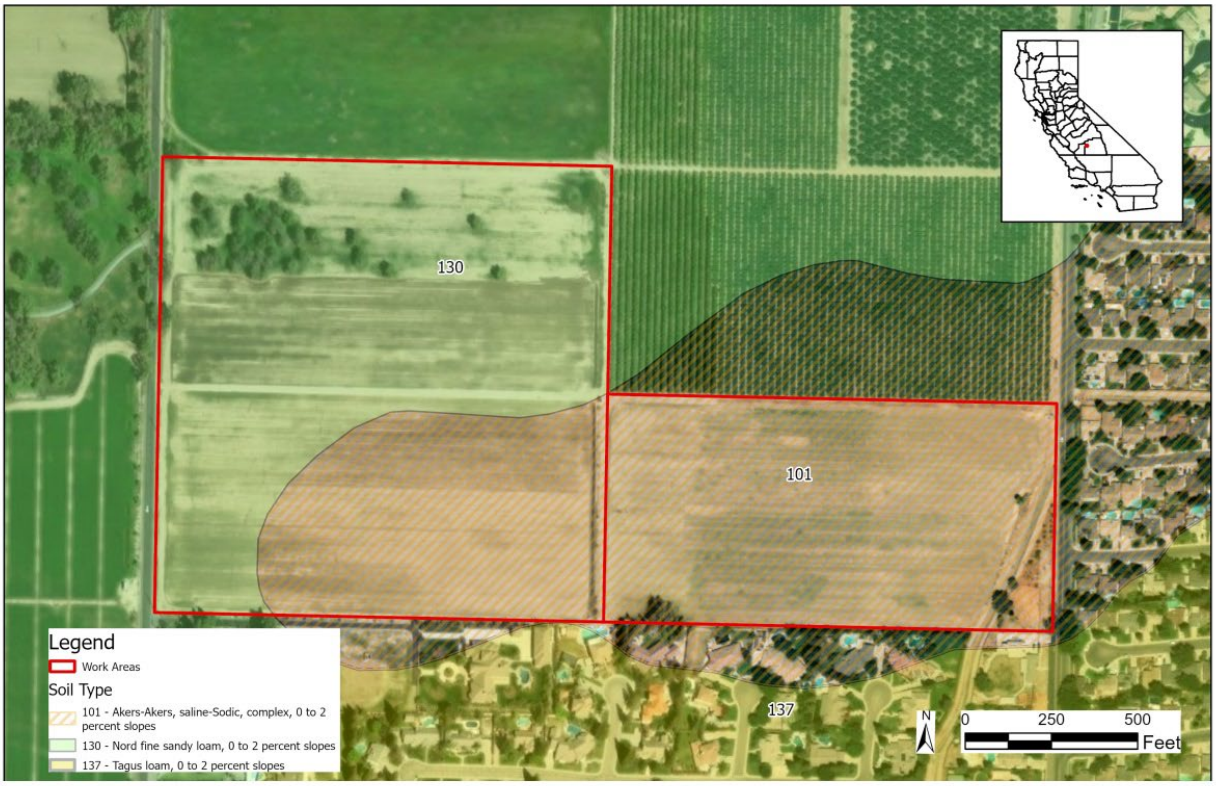


Phase 1 Cultural Resources Assessment Elliott SJVH, Visalia, CA 93277

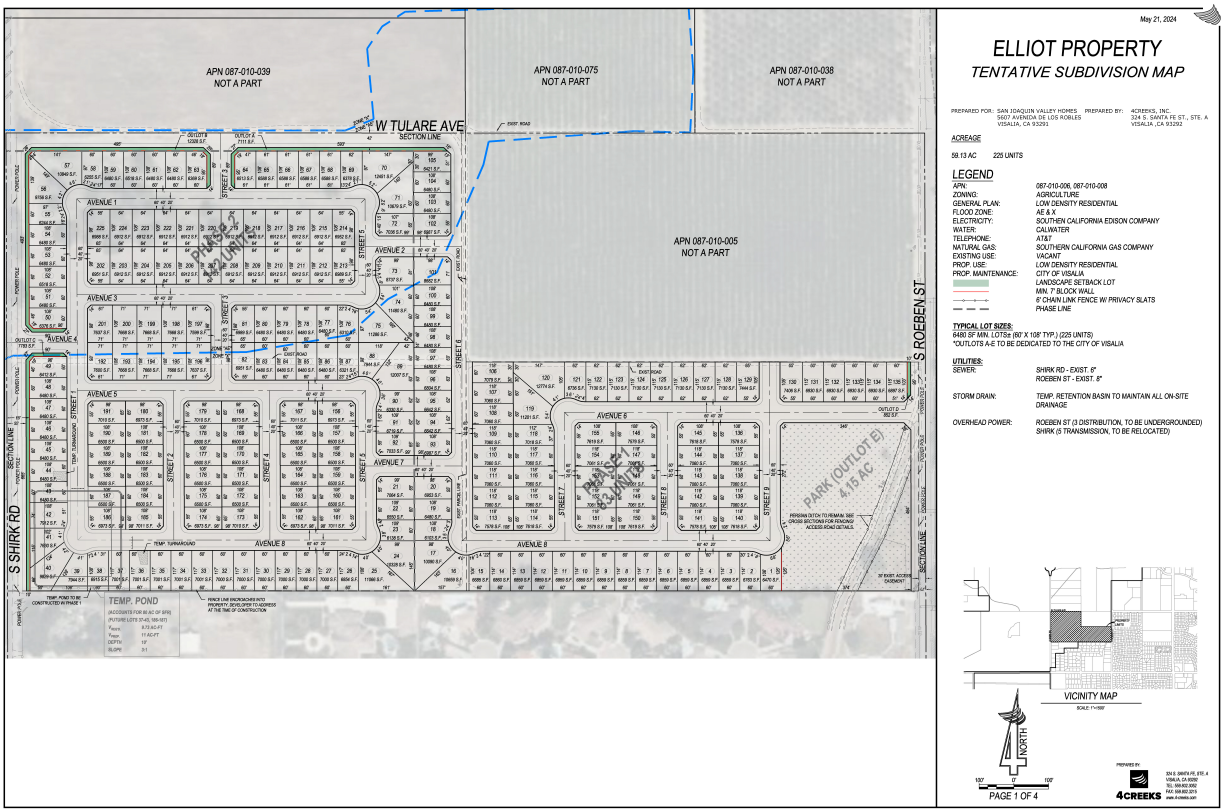
Figure 1 - Project Location (adapted from USGS 7.5' Series Visalia, California, 1949



	Phase 1 Cultural Resources Assessment Elliot SJVH, Visalia, CA 93277	Figure 2 - Project Boundary



	Phase 1 Cultural Resources Assessment Elliot SJVH, Visalia, CA 93277	Figure 3 - Soil Types Occurring in the Project Area


APN 087-010-039
NOT A PART
APN 087-010-075
NOT A PART
APN 087-010-038
NOT A PART
APN 087-010-005
NOT A PART
W TULARE AVE
SECTION LINE
S SHIRK RD
S ROEBEN ST
AVENUE 1
AVENUE 2
AVENUE 3
AVENUE 4
AVENUE 5
AVENUE 6
AVENUE 7
AVENUE 8
PARK (OUTLOT E) 4.15 AC.
TEMP. POND
May 21, 2024
ELLIOT PROPERTY
TENTATIVE SUBDIVISION MAP
PREPARED FOR: SAN JOAQUIN VALLEY HOMES
5607 AVENIDA DE LOS ROBLES
VISALIA, CA 93291
PREPARED BY: 4CREEKS, INC.
324 S. SANTA FE ST., STE. A
VISALIA, CA 93292
ACREAGE
59.13 AC 225 UNITS
LEGEND
APN: 087-010-006, 087-010-008
ZONING: AGRICULTURE
GENERAL PLAN: LOW DENSITY RESIDENTIAL
FLOOD ZONE: AE & X
ELECTRICITY: SOUTHERN CALIFORNIA EDISON COMPANY
WATER: CALWATER
TELEPHONE: AT&T
NATURAL GAS: SOUTHERN CALIFORNIA GAS COMPANY
EXISTING USE: VACANT
PROP. USE: LOW DENSITY RESIDENTIAL
PROP. MAINTENANCE: CITY OF VISALIA
LANDSCAPE SETBACK LOT
MIN. 7' BLOCK WALL
6' CHAIN LINK FENCE W/ PRIVACY SLATS
PHASE LINE
TYPICAL LOT SIZES:
6480 SF MIN. LOTS± (60' X 108' TYP.) (225 UNITS)
*OUTLOTS A-E TO BE DEDICATED TO THE CITY OF VISALIA
UTILITIES:
SEWER: SHIRK RD - EXIST. 8"
ROEBEN ST - EXIST. 8"
STORM DRAIN: TEMP. RETENTION BASIN TO MAINTAIN ALL ON-SITE DRAINAGE
OVERHEAD POWER: ROEBEN ST (3 DISTRIBUTION, TO BE UNDERGROUNDED)
SHIRK (5 TRANSMISSION, TO BE RELOCATED)
VICINITY MAP
NORTH
PAGE 1 OF 4
4CREEKS



	Phase 1 Cultural Resources Assessment Elliot SJVH, Visalia, CA 93277	Figure 5 - Overview from north edge of project area, facing south



	Phase 1 Cultural Resources Assessment Elliot SJVH, Visalia, CA 93277	Figure 6 - Overview from northeast corner of project area, facing southwest



	Phase 1 Cultural Resources Assessment Elliot SJVH, Visalia, CA 93277	Figure 7 - Overview from center of project area, facing north



	Phase 1 Cultural Resources Assessment Elliot SJVH, Visalia, CA 93277	Figure 8 - Overview from center of project area, facing east



	Phase 1 Cultural Resources Assessment Elliot SJVH, Visalia, CA 93277	Figure 9 - Overview from center of project area, facing south



	Phase 1 Cultural Resources Assessment Elliot SJVH, Visalia, CA 93277	Figure 10 - Overview from center of project area, facing west



	Phase 1 Cultural Resources Assessment Elliot SJVH, Visalia, CA 93277	Figure 11 - Overview from southeast corner of project area, facing northwest



	Phase 1 Cultural Resources Assessment Elliot SJVH, Visalia, CA 93277	Figure 12 - Overview from south corner of project area, facing north



	Phase 1 Cultural Resources Assessment Elliot SJVH, Visalia, CA 93277	Figure 13 - Overview from southwest corner of project area, facing northeast



	Phase 1 Cultural Resources Assessment Elliot SJVH, Visalia, CA 93277	Figure 14 - Overview from west edge of project area, facing east



	Phase 1 Cultural Resources Assessment Elliot SJVH, Visalia, CA 93277	Figure 15 - Overview from northwest corner of project area, facing southeast

APPENDIX A

Southern San Joaquin Valley Information Center Records Search

Corporate Headquarters
1322 E. Shaw Avenue, Suite 400 Fresno, CA, 93710
www.soarhere.com • 559.547.8884

Cultural Resources Records Search Request

Tuesday, October 12, 2023

Southern San Joaquin Valley Information Center
California State University Bakersfield
Mail Stop: 72DOB
9001 Stockdale Highway
Bakersfield, CA 93311-1022
Tel: 661.654.2289
ssjvic@csub.edu

RE: Phase I CEQA Cultural Resource Evaluation Report for proposed housing development bounded by Shirk and Tulare roads and Roeben Street, Visalia, CA, 93277. APNs 087-010-006, 087-010-008.

Dear Celeste,

Please find attached one project location map and shapefiles for the proposed housing development bounded by Shirk and Tulare roads and Roeben Street Phase I Cultural Resource Assessment Report, and the SSJVIC/CHRIS Data Request Form. The proposed project is situated on the Visalia, California (2021), USGS 7.5' Series Quads. The 59.11-acre project area is located on APNs 087-010-006 and 087-010-008 and is bounded by Shirk and Tulare roads and Roeben Street in Visalia, California. The project is for a proposed 224-unit housing development with a center at approximately WGS 84 11 N 287779 E 4021822 N.

Please conduct a normal rate records search, including no more than a 0.50-mile radius buffer, of the project location illustrated on the attached map. Please provide the following information:

- PDF of all site records and associated survey reports (Note: PDF/photocopy only those site reports that appear to be pertinent to the immediate project location and search area; surveys and other site/resources can be listed, with full reports requested later if necessary).
- A list of all previous sites and surveys within the search area.
- A confirmation of any sites, structures, or linear features on local, state, and/or federal registers/lists in the project location or the 0.50-mile search area that are not yet mapped on the GIS.

If the normal records search costs will exceed $500.00, or if you have any questions or comments, please e-mail me at hfroshour@soarhere.com. Please contact me as soon as possible if there will be any delays with the records search, as the client may request an expedited search. Please email the encrypted search results in PDF format to: hfroshour@soarhere.com.

Many thanks in advance for your assistance with this project.

Most Sincerely,



Heather Froshour, M.A., R.P.A.
Sr. Archaeologist
Soar Environmental Consulting, Inc.
207.232.8912

CHRIS Data Request Form

ACCESS AND USE AGREEMENT NO.: 515.00 **IC FILE NO.:** _____

To: Southern San Joaquin Valley Information Center

Print Name: Heather Froshour Date: 10/12/2023

Affiliation: Soar Environmental Consulting Inc.

Address: 1322 East Shaw Ave. Suite 400

City: Fresno State: CA Zip: 93710

Phone: (559) 547-8884 Fax: _____ Email: hfroshour@soarhere.com

Billing Address (if different than above): _____

Billing Email: cdavis@soarhere.com Billing Phone: _____

Project Name / Reference: Phase I Cultural Resources Assessment Report Elliot SJVH

Project Street Address: APNs 087-010-006 & 087-010-008; Shirk & Tulare Rds & Roeben St

County or Counties: Tulare

Township/Range/UTMs: T 18S, R 24E, S 34; WGS 84 11 N 287779 E 4021822 N

USGS 7.5' Quad(s): Visalia California (2022), USGS 7.5' Series Quad;

PRIORITY RESPONSE (Additional Fee): yes ☐ / no ■

TOTAL FEE NOT TO EXCEED: $ 500.00
(If blank, the Information Center will contact you if the fee is expected to exceed $1,000.00)

Special Instructions:

Information Center Use Only

Date of CHRIS Data Provided for this Request: _____

Confidential Data Included in Response: yes ☐ / no ☐

Notes: _____

CHRIS Data Request Form

Mark the request form as needed. Attach a PDF of your project area (with the radius if applicable) mapped on a 7.5' USGS topographic quadrangle to scale 1:24000 ratio 1:1 neither enlarged nor reduced and include a shapefile of your project area, if available. Shapefiles are the current CHRIS standard for submitting digital spatial data for your project area or radius. **Check with the appropriate IC for current availability of digital data products.**

- Documents will be provided in PDF format. Paper copies will only be provided if PDFs are not available at the time of the request or under specially arranged circumstances.
- Location information will be provided as a digital map product (Custom Maps or GIS data) unless the area has not yet been digitized. In such circumstances, the IC may provide hand drawn maps.
- In addition to the $150/hr. staff time fee, client will be charged the Custom Map fee when GIS is required to complete the request [e.g., a map printout or map image/PDF is requested and no GIS Data is requested, or an electronic product is requested (derived from GIS data) but no mapping is requested].

For product fees, see the CHRIS IC Fee Structure on the OHP website.

1. Map Format Choice:

Select One: Custom GIS Maps ☒ GIS Data ☐ Custom GIS Maps **and** GIS Data ☐ No Maps ☐

Any selection below left unmarked will be considered a "no. "

Location Information:

	Within project area	Within 0.5 mi. radius
ARCHAEOLOGICAL Resource Locations[1]	yes ☒ / no ☐	yes ☒ / no ☐
NON-ARCHAEOLOGICAL Resource Locations	yes ☒ / no ☐	yes ☒ / no ☐
Report Locations[1]	yes ☒ / no ☐	yes ☒ / no ☐
"Other" Report Locations[2]	yes ☐ / no ☒	yes ☐ / no ☒

3. Database Information:
(contact the IC for product examples, or visit the SSJVIC website for examples)

	Within project area	Within 0.5 mi. radius
ARCHAEOLOGICAL Resource Database[1]		
List (PDF format)	yes ☒ / no ☐	yes ☒ / no ☐
Detail (PDF format)	yes ☐ / no ☒	yes ☐ / no ☒
Excel Spreadsheet	yes ☐ / no ☒	yes ☐ / no ☒
NON-ARCHAEOLOGICAL Resource Database		
List (PDF format)	yes ☒ / no ☐	yes ☒ / no ☐
Detail (PDF format)	yes ☐ / no ☒	yes ☐ / no ☒
Excel Spreadsheet	yes ☐ / no ☒	yes ☐ / no ☒
Report Database[1]		
List (PDF format)	yes ☒ / no ☐	yes ☒ / no ☐
Detail (PDF format)	yes ☐ / no ☒	yes ☐ / no ☒
Excel Spreadsheet	yes ☐ / no ☒	yes ☐ / no ☒
Include "Other" Reports [2]	yes ☒ / no ☐	yes ☒ / no ☐

4. Document PDFs (paper copy only upon request)**:**

	Within project area	Within 0.5 mi. radius
ARCHAEOLOGICAL Resource Records[1]	yes ☒ / no ☐	yes ☒ / no ☐
NON-ARCHAEOLOGICAL Resource Records	yes ☒ / no ☐	yes ☒ / no ☐
Reports[1]	yes ☒ / no ☐	yes ☒ / no ☐
"Other" Reports[2]	yes ☐ / no ☒	yes ☐ / no ☒

CHRIS Data Request Form

5. Eligibility Listings and Documentation:

	Within project area	Within 0.5 mi. radius
OHP Built Environment Resources Directory[3]:		
Directory listing only (Excel format)	yes ☒ / no ☐	yes ☒ / no ☐
Associated documentation[4]	yes ☒ / no ☐	yes ☒ / no ☐
OHP Archaeological Resources Directory[1,5]:		
Directory listing only (Excel format)	yes ☒ / no ☐	yes ☒ / no ☐
Associated documentation[4]	yes ☒ / no ☐	yes ☒ / no ☐
***California Inventory of Historic Resources* (1976):**		
Directory listing only (PDF format)	yes ☒ / no ☐	yes ☒ / no ☐
Associated documentation[4]	yes ☒ / no ☐	yes ☒ / no ☐

6. Additional Information:

The following sources of information may be available through the Information Center. However, several of these sources are now available on the OHP website and can be accessed directly. The Office of Historic Preservation makes no guarantees about the availability, completeness, or accuracy of the information provided through these sources. Indicate below if the Information Center should review and provide documentation (if available) of any of the following sources as part of this request.

Caltrans Bridge Survey	yes ☒ / no ☐
Ethnographic Information	yes ☒ / no ☐
Historical Literature	yes ☒ / no ☐
Historical Maps	yes ☒ / no ☐
Local Inventories	yes ☒ / no ☐
GLO and/or Rancho Plat Maps	yes ☒ / no ☐
Shipwreck Inventory	yes ☐ / no ☒
Soil Survey Maps	yes ☒ / no ☐

---

[1] In order to receive archaeological information, requestor must meet qualifications as specified in Section III of the current version of the California Historical Resources Information System Information Center Rules of Operation Manual and be identified as an Authorized User or Conditional User under an active CHRIS Access and Use Agreement.

[2] "Other" Reports GIS layer consists of report study areas for which the report content is almost entirely non-fieldwork related (e.g., local/regional history, or overview) and/or for which the presentation of the study area boundary may or may not add value to a record search.

[3] Provided as Excel spreadsheets with no cost for the rows; the only cost for this component is IC staff time. Includes, but not limited to, information regarding National Register of Historic Places, California Register of Historical Resources, California State Historical Landmarks, California State Points of Historical Interest, and historic building surveys. Previously known as the HRI and then as the HPD, it is now known as the Built Environment Resources Directory (BERD). The Office of Historic Preservation compiles this documentation and it is the source of the official status codes for evaluated resources.

[4] Associated documentation will vary by resource. Contact the IC for further details.

[5] Provided as Excel spreadsheets with no cost for the rows; the only cost for this component is IC staff time. Previously known as the Archaeological Determinations of Eligibility, now it is known as the Archaeological Resources Directory (ARD). The Office of Historic Preservation compiles this documentation and it is the source of the official status codes for evaluated resources.

California Historical Resources Information System



Fresno
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic

10/23/2023

Heather Froshour
Soar Environmental Consulting
1322 East Shaw Ave., Suite 400
Fresno, CA 93710

Re: Phase I Cultural Resources Assessment Report Elliot SJVH
Records Search File No.: 23-439

The Southern San Joaquin Valley Information Center received your record search request for the project area referenced above, located on the Visalia USGS 7.5' quad. The following reflects the results of the records search for the project area and the 0.5 mile radius:

As indicated on the data request form, the locations of resources and reports are provided in the following format: ☒ custom GIS maps ☐ GIS data

Resources within project area:	P-54-002177
Resources within 0.5 mile radius:	P-54-003667, 003670
Reports within project area:	TU-00041, 01190
Reports within 0.5 mile radius:	TU-00246, 00247, 00960, 00962, 00963, 00964, 01006

Resource Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Resource Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Report Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Report Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Resource Record Copies:	☒ enclosed	☐ not requested	☐ nothing listed
Report Copies:	☒ enclosed	☐ not requested	☐ nothing listed
OHP Built Environment Resources Directory:	☒ enclosed	☐ not requested	☐ nothing listed
Archaeological Determinations of Eligibility:	☐ enclosed	☐ not requested	☒ nothing listed
CA Inventory of Historic Resources (1976):	☐ enclosed	☐ not requested	☒ nothing listed

Caltrans Bridge Survey: Not available at SSJVIC; please see https://dot.ca.gov/programs/environmental-analysis/cultural-studies/california-historical-bridges-tunnels

Ethnographic Information: Not available at SSJVIC

Historical Literature: Not available at SSJVIC

Historical Maps: Not available at SSJVIC; please see http://historicalmaps.arcgis.com/usgs/

Local Inventories: Not available at SSJVIC

GLO and/or Rancho Plat Maps: Not available at SSJVIC; please see http://www.glorecords.blm.gov/search/default.aspx#searchTabIndex=0&searchByTypeIndex=1 and/or http://www.oac.cdlib.org/view?docId=hb8489p15p;developer=local;style=oac4;doc.view=items

Shipwreck Inventory: Not available at SSJVIC; please see https://www.slc.ca.gov/shipwrecks/

Soil Survey Maps: Not available at SSJVIC; please see http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Jeremy E David
Assistant Coordinator

Report List

SSJVIC Record Search 23-439

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
TU-00041	BLM - Permit No. CA-95-01-0004; NADB-R - 1141258	1995	Self, William	Class I Overview, Santa Fe Pacific Pipeline Partners, L.P., Proposed Concord to Colton Pipeline Project	William Self Associates	
TU-00246		1979	Cantwell, R.J.	Archaeological and Historical Survey Report for the Walnut Avenue Extension from Watson Ditch Near Shirk Road to the Termination of Road 86, Visalia, California	Individual Consultant	
TU-00247		1979	Cantwell, R.J.	Historic Property Survey Report for the Extension of Walnut Avenue, Road A288 and Road 86, Approximately Two and a Half Miles of New Road, from Watson Ditch to Southern Terminus of Akers Road	California Department of Transportation	
TU-00960	Caltrans - 06-TUL-198 PM 5.0/9.3 EA 06-200-278600	1989	Chavez, David	Historic Resources Evaluation Repot for a Proposed Freeway Project in Visalia	CH2M Hill / David Chavez & Associates	
TU-00962		1990	Chavez, David	Historic Property Survey Report for a Proposed Freeway Project in Visalia	CH2M Hill / David Chavez & Associates	
TU-00963	Caltrans - 06-TUL-198 PM 5.0/9.3 EA 06-200-278600	1989	Unknown	Archaeological Survey Report for a Proposed Freeway Project in Visalia	CH2M Hill / David Chavez & Associates	54-001368
TU-00964		1989	Chavez, David	Historic Architectural Survey Report for the State Route 198 Draft Environmental Impact Report	CH2M Hill	
TU-01006	Caltrans - 06-TUL-198 PM 4.6/11.9 EA 06-349201	1999	Binning, Jeanne and Chick, Phil	Negative Archaeological Survey Report to Perform Replacement Plantatin for Freeze Damage to landscaping Along Portions of State Route 198 In and Near Visalia	California Department of Transportation	
TU-01190		1957	Mitchell, Annie R.	Jim Savage and the Tulareño Indians	Westernlore Press	

Resource List

SSJVIC Record Search 23-439

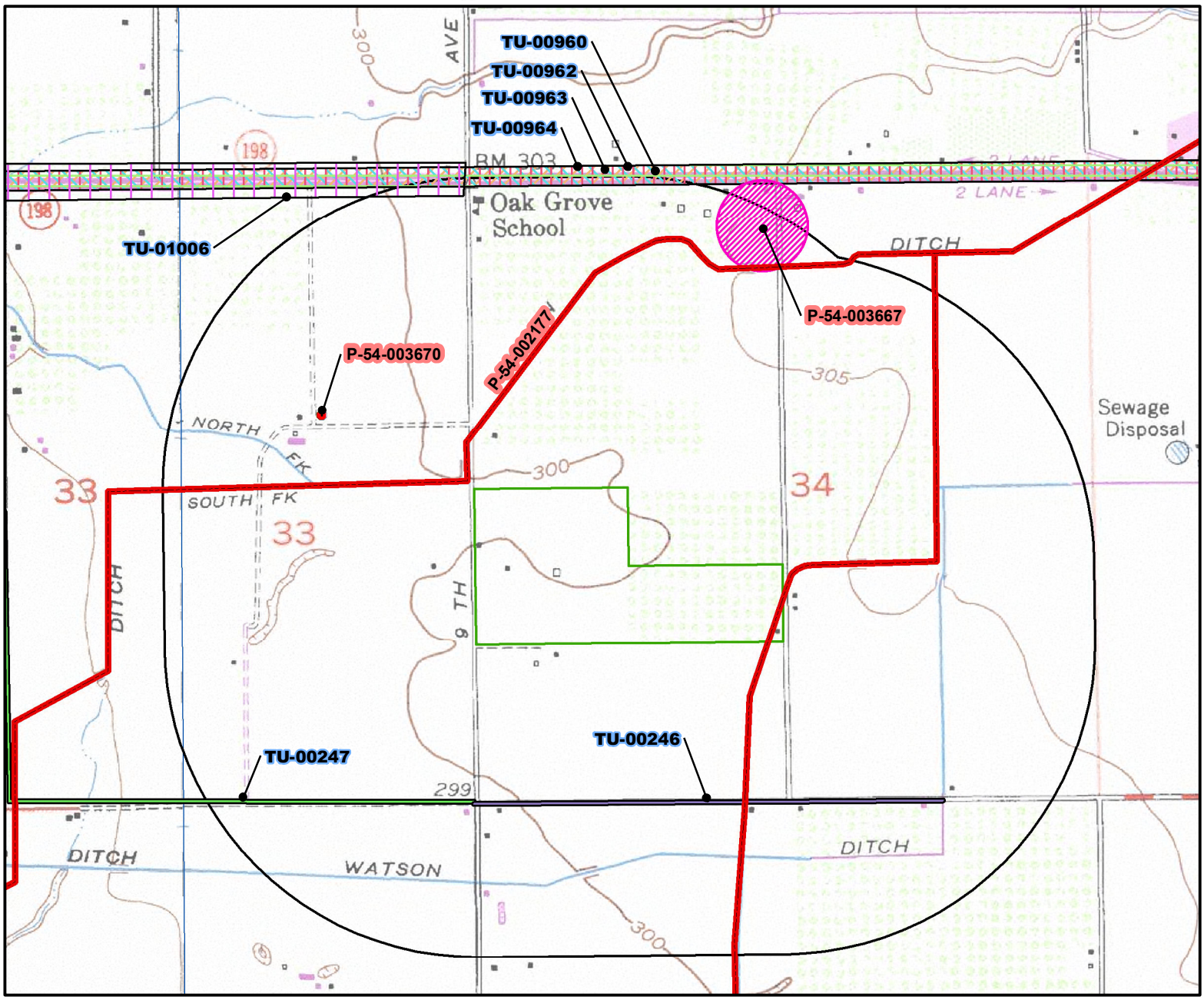
Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-54-002177	CA-TUL-003259H	Resource Name - South Fork Persian Ditch; Resource Name - SFPP-22; SFPP-23	Structure	Historic	HP20	1995 (Carrie D. Wills, Allen Estes, William Self Associates); 1995 (Carrie D. Wills, Allen Estes, William Self Associates); 2022 (Consuelo Y. Sauls, Taylored Archaeology)	TU-01937
P-54-003667		Resource Name - 400 Block of Roeben Road - Two Residences and Associated Outbuildings on Roeben Road	Building	Historic	HP02; HP04	1989 (Sally Woodbridge, David Chavez and Associates)	
P-54-003670		Resource Name - Cottonwood Court	Building	Historic	HP02	1989 (Sally Woodbridge, David Chavez and Associates)	

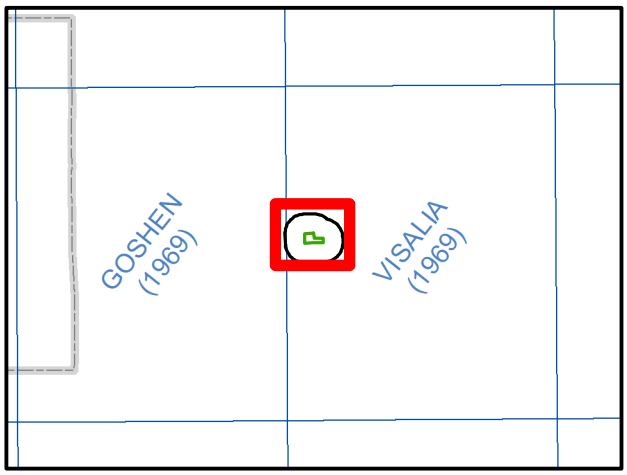
California Historical Resources Information System



Fresno
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic





May depict confidential cultural resource locations. Do not distribute.

Map pages depicting no data have been excluded.

Project Area

Record Search radius

N
W E
S

0 0.075 0.15 0.3 Miles

0 0.1 0.2 0.4 Kilometers

SSJV Information Center Record Search 23-439
Requester: Heather Froshour; Soar Environmental Consulting, Inc.
Project Name: Phase I Cultural Resource Assessment Report Elliot SJVH
USGS 7.5' Quad(s): Visalia
County: Tulare

APPENDIX B

Sacred Lands File & Native American Contacts List Request

Corporate Headquarters
1322 E. Shaw Avenue, Suite 400 Fresno, CA, 93710
www.soarhere.com • 559.547.8884

Sacred Lands File & Native American Contacts List Request

Thursday, October 12, 2023

Native American Heritage Commission
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Tel: 916.373.3710
Fax: 916.373.5471
nahc@nahc.ca.gov

RE: Phase I CEQA Cultural Resource Evaluation Report for proposed housing development bounded by Shirk and Tulare roads and Roeben Street, Visalia, CA, 93277. APNs 087-010-006, 087-010-008.

Dear Sir/Madam,

Please find attached one project location map for the proposed housing development bounded by Shirk and Tulare roads and Roeben Street Phase I Cultural Resource Assessment Report, and the Sacred Lands File & Native American Contacts List Request. The proposed project is situated on the Visalia, California (2021), USGS 7.5' Series Quads. The 59.11-acre project area is located on APNs 087-010-006 and 087-010-008 and is bounded by Shirk and Tulare roads and Roeben Street in Visalia, California. The project is for a proposed 224-unit housing development with a center at approximately WGS 84 11 N 287779 E 4021822 N.

This letter is intended to inform you of the project and to help ensure compliance with the National Environmental Protection Act (NEPA). As part of the Cultural Resources Study for the project, we are requesting your insights on potential Native American cultural properties and resources in and/or near the project.

Please respond at your earliest convenience if you have any information to consider for this study.

Also, we would greatly appreciate if you could review the attached map and indicate to us if there are any concerns you might have or input regarding potentially sensitive cultural heritage values in the project area and vicinity.

Feel free to contact me by email at hfroshour@soarhere.com or phone at 207.232.8912.

Most Sincerely,



Heather Froshour, M.A., R.P.A.
Sr. Archaeologist
Soar Environmental Consulting, Inc.
207.232.8912

Sacred Lands File & Native American Contacts List Request

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: Phase I Cultural Resources Assessment Report Elliot SJVH

County: Tulare

USGS Quadrangle Name: Visalia, California, Kern County, 7.5' Series

Township: 18S **Range:** 24E **Section(s):** 34

Company/Firm/Agency: Soar Environmental Consulting Inc.

Street Address: 1322 East Shaw Ave. Suite 400

City: Fresno **Zip:** 93710

Phone: (559)547-8884

Fax:

Email: hfroshour@soarhere.com

Project Description:

The 59.11-acre project area is located on APNs 087-010-006 and 087-010-008 and is bounded by Shirk and Tulare roads and Roeben Street in Visalia, California. The project is for a proposed 224-unit housing development with a center at approximately WGS 84 11 N 287779 E 4021822 N.

Local Government Tribal Consultation List Request

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Type of List Requested

■ **CEQA Tribal Consultation List (AB 52)** – ***Per Public Resources Code § 21080.3.1, subs. (b), (d), (e) and 21080.3.2***

☐ **General Plan (SB 18)** - ***Per Government Code § 65352.3.***

Local Action Type:

☐ **General Plan** ☐ **General Plan Element** ☐ **General Plan Amendment**

☐ **Specific Plan** ☐ **Specific Plan Amendment** ☐ **Pre-planning Outreach Activity**

Required Information

Project Title: Phase I Cultural Resources Assessment Report Elliot SJVH

Local Government/Lead Agency: Soar Environmental Consulting Inc.

Contact Person: Heather Froshour

Street Address: 1322 East Shaw Ave. Suite 400

City: Fresno **Zip:** 93710

Phone: (559) 547-8884 **Fax:**

Email: hfroshour@soarhere.com

Specific Area Subject to Proposed Action

County: Tulare **City/Community:** Visalia

Project Description:

The 59.11-acre project area is located on APNs 087-010-006 and 087-010-008 and is bounded by Shirk and Tulare roads and Roeben Street in Visalia, California. The project is for a proposed 224-unit housing development with a center at approximately WGS 84 11 N 287779 E 4021822 N.

Additional Request

■ **Sacred Lands File Search** - ***Required Information:***

USGS Quadrangle Name(s): Visalia, California (2022) 7.5' Series Quad

Township: 18S **Range:** 24E **Section(s):** 34

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Reginald Pagaling
Chumash

VICE-CHAIRPERSON
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

SECRETARY
Sara Dutschke
Miwok

PARLIAMENTARIAN
Wayne Nelson
Luiseño

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
Laurena Bolden
Serrano

COMMISSIONER
Reid Milanovich
Cahuilla

COMMISSIONER
Vacant

EXECUTIVE SECRETARY
Raymond C. Hitchcock
Miwok, Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

December 1, 2023

Heather Froshour
Soar Environmental Consulting Inc.

Via Email to: hfroshour@soarhere.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Phase I Cultural Resources Assessment Report Elliot SJVH Project, Tulare County

Dear Ms. Froshour:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

- Any report that may contain site forms, site significance, and suggested mitigation measures.

  All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was negative.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Cameron.vela@nahc.ca.gov.

Sincerely,

Cameron Vela

Cameron Vela
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Tulare County
12/1/2023

County	Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
Tulare	Santa Rosa Rancheria Tachi Yokut Tribe	F	Samantha McCarty, Cultural Specialist II	P.O. Box 8 Lemoore, CA, 93245	(559) 633-3440		smccarty@tachi-yokut-nsn.gov	Southern Valley Yokut	Fresno,Kern,Kings,Merced,Monterey,San Benito,San Luis Obispo,Tulare	10/3/2023
	Santa Rosa Rancheria Tachi Yokut Tribe	F	Shana Powers, THPO	P.O. Box 8 Lemoore, CA, 93245	(559) 423-3900		spowers@tachi-yokut-nsn.gov	Southern Valley Yokut	Fresno,Kern,Kings,Merced,Monterey,San Benito,San Luis Obispo,Tulare	10/3/2023
	Santa Rosa Rancheria Tachi Yokut Tribe	F	Nichole Escalon, Cultural Specialist I	P.O. Box 8 Lemoore, CA, 93245	(559) 924-1278		nescalone@tachi-yokut-nsn.gov	Southern Valley Yokut	Fresno,Kern,Kings,Merced,Monterey,San Benito,San Luis Obispo,Tulare	10/3/2023
	Tule River Indian Tribe	F	Neil Peyron, Chairperson	P.O. Box 589 Porterville, CA, 93258	(559) 781-4271	(559) 781-4610	neil.peyron@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	
	Wuksachi Indian Tribe/Eshom Valley Band	N	Kenneth Woodrow, Chairperson	1179 Rock Haven Ct. Salinas, CA, 93906	(831) 443-9702		kwood8934@aol.com	Foothill Yokut Mono	Alameda,Calaveras,Contra Costa,Fresno,Inyo,Kings,Madera,Marin,Mariposa,Merced,Mono,Monterey,San Benito,San	6/19/2023

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Phase I Cultural Resources Assessment Report Elliot SJVH Project, Tulare County.

Record: PROJ-2023-005824
Report Type: AB52 GIS
Counties: Tulare
NAHC Group: All

Corporate Headquarters
1322 E. Shaw Avenue, Suite 400 Fresno, CA, 93710
www.soarhere.com • 559.547.8884

Monday, December 4, 2023

Santa Rosa Rancheria Tachi Yokut Tribe
P.O. Box 8
Lemoore, CA, 93245
Phone: (559) 924-1278
nescalone@tachi-yokut-nsn.gov

RE: Proposed housing subdivision bounded by Shirk and Tulare roads and Roeben Street, Visalia, CA, 93277. APNs 087-010-006, 087-010-008.

Dear Nichole Escalon, Cultural Specialist l,

Below, please find a description of the proposed project, a map showing the project location, and the name of our project point of contact, pursuant to Public Resources Code (PRC) § 21080.3.1 (d).

The proposed project is situated on the Visalia, California (2021), USGS 7.5' Series Quadrangle. The 59.13-acre project area is located on APNs 087-010-006 and 087-010-008 and is bounded by Shirk and Tulare Roads and Roeben Street in Visalia, California. The project is for a proposed 224-unit housing development with a center at approximately WGS 84 11 N 287779 E 4021822 N.

4Creeks, Inc. has requested a Phase 1 Archaeological Resource Assessment (Phase 1) to determine the potential for cultural resources prior to development, pursuant to state and local laws, including the California Environmental Quality Act (CEQA) and Tulare County guidelines. Soar Environmental Consulting Inc. (Soar Environmental) proposes to complete the Phase 1 study for the present project.

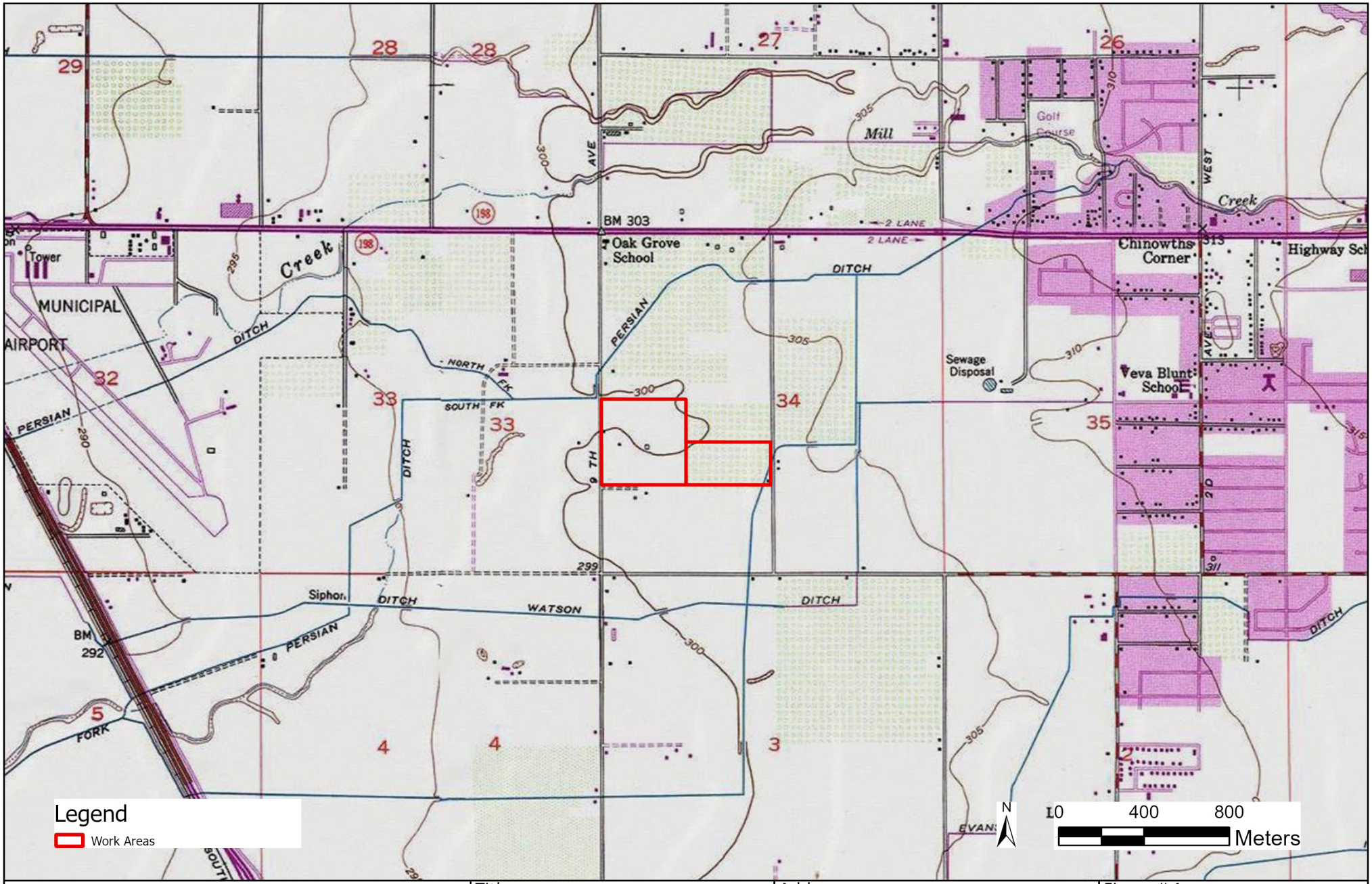
An important element of a Phase 1 study is to identify sites, resources, or locations of cultural importance to the local Native American community. As part of the process, Soar Environmental contacted the Native American Heritage Commission (NAHC) on October 13 2023. On December 1, 2023, Soar received a response letter from the NAHC indicating **negative results** of the Sacred Lands File search. Furthermore, the NAHC identified your organization as a point of contact regarding potentially known recorded sites or cultural resources within Tulare County.

Soar contacted the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System on October 13, 2023. On October 23, 2023, SSJVIC revealed one (1) historic cultural resource within the project area. No archaeological sites, three (3) potentially historic isolated finds, and one (1) historical resource are known within the project area. Two (2) previous surveys have been conducted within the project area. Two (2) historic cultural resources were identified within the ½-mile search radius of the project area. No historic properties on federal, state, or local inventories have been evaluated within the project area. Seven (7) previous surveys have been conducted within a ½-mile radius of the project area. On November 18, 2023, Soar conducted an archeological pedestrian field survey of the project area. **One (1) historic resource** was identified during the field survey, the South Fork Persian Ditch earthenware irrigation ditch.

Soar is contacting you to determine if you have any concerns regarding the proposed development. Pursuant to PRC § 21080.3.1 (d), you have **30 days** from the receipt of this letter to request consultation, in writing, with Soar. Should you have any concerns or knowledge of cultural resources in the specific project area, please contact me at hfroshour@soarhere.com or at (207) 232-8912 at your earliest convenience. If Soar does not hear from you within this time, we shall assume that you have no comments regarding this project.

Respectfully,

Heather Froshour, M.A., R.P.A.
Sr. Archaeologist
Soar Environmental Consulting, Inc.



SOAR ENVIRONMENTAL CONSULTING 1322 East Shaw Avenue, Suite 400 Fresno, CA 93710 www.soarhere.com 559.547.8884	Title Visalia Topographic Map Client 4Creeks	Address Subdivision Bounded by Shirk and Tulare roads and Roeben Street. APNs 087-010-006, 087-010-008.	Figure # 1 Topographic Map Revision Date 10/13/2023

Corporate Headquarters
1322 E. Shaw Avenue, Suite 400 Fresno, CA, 93710
www.soarhere.com • 559.547.8884

Monday, December 4, 2023

Santa Rosa Rancheria Tachi Yokut Tribe
P.O. Box 8
Lemoore, CA, 93245
Phone: (559) 633-3440
smccarty@tachi-yokut-nsn.gov

RE: Proposed housing subdivision bounded by Shirk and Tulare roads and Roeben Street, Visalia, CA, 93277. APNs 087-010-006, 087-010-008.

Dear Samantha McCarty, Cultural Specialist ll,

Below, please find a description of the proposed project, a map showing the project location, and the name of our project point of contact, pursuant to Public Resources Code (PRC) § 21080.3.1 (d).

The proposed project is situated on the Visalia, California (2021), USGS 7.5' Series Quadrangle. The 59.13-acre project area is located on APNs 087-010-006 and 087-010-008 and is bounded by Shirk and Tulare Roads and Roeben Street in Visalia, California. The project is for a proposed 224-unit housing development with a center at approximately WGS 84 11 N 287779 E 4021822 N.

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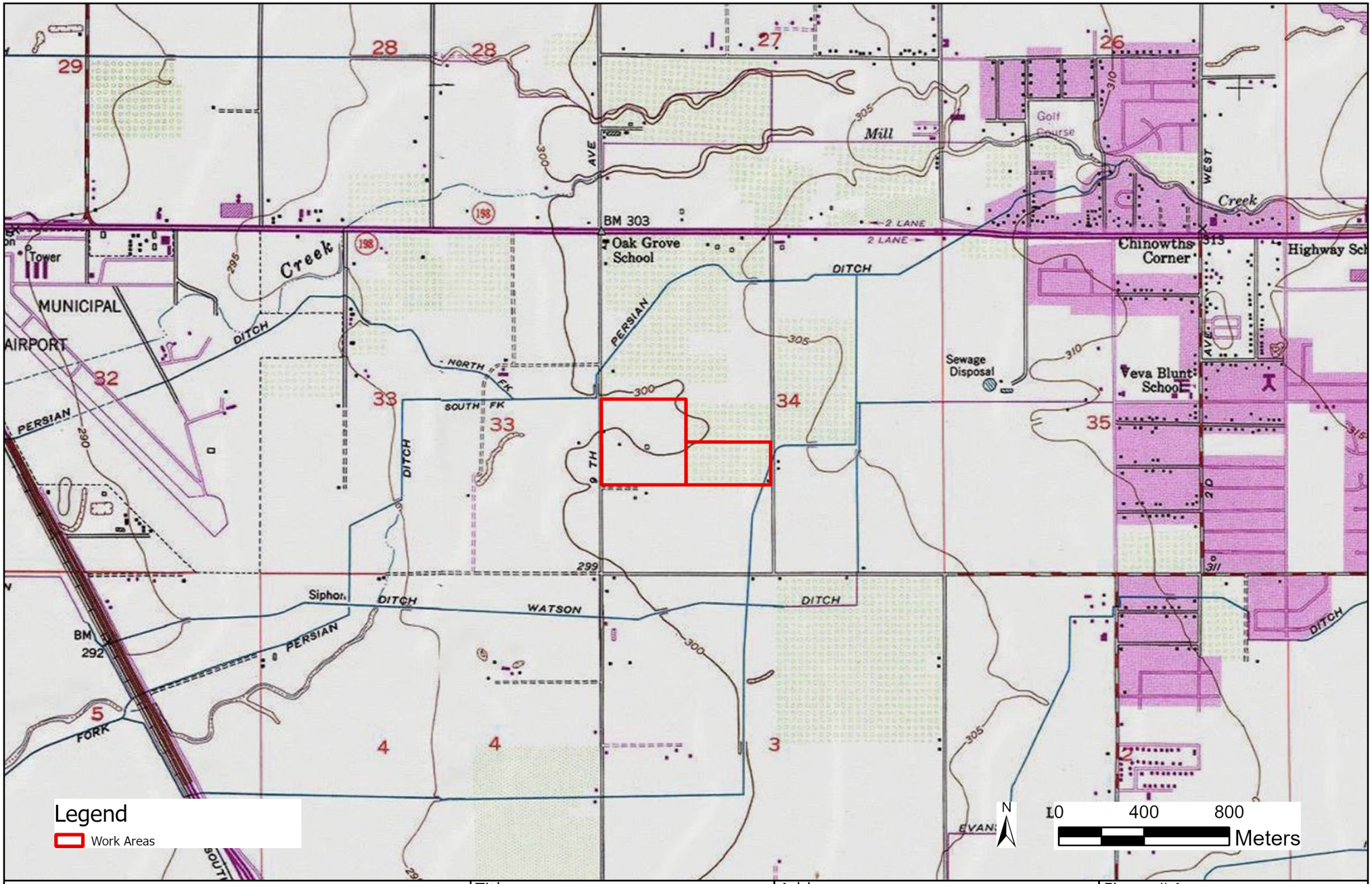
An important element of a Phase 1 study is to identify sites, resources, or locations of cultural importance to the local Native American community. As part of the process, Soar Environmental contacted the Native American Heritage Commission (NAHC) on October 13 2023. On December 1, 2023, Soar received a response letter from the NAHC indicating **negative results** of the Sacred Lands File search. Furthermore, the NAHC identified your organization as a point of contact regarding potentially known recorded sites or cultural resources within Tulare County.

Soar contacted the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System on October 13, 2023. On October 23, 2023, SSJVIC revealed one (1) historic cultural resource within the project area. No archaeological sites, three (3) potentially historic isolated finds, and one (1) historical resource are known within the project area. Two (2) previous surveys have been conducted within the project area. Two (2) historic cultural resources were identified within the ½-mile search radius of the project area. No historic properties on federal, state, or local inventories have been evaluated within the project area. Seven (7) previous surveys have been conducted within a ½-mile radius of the project area. On November 18, 2023, Soar conducted an archeological pedestrian field survey of the project area. **One (1) historic resource** was identified during the field survey, the South Fork Persian Ditch earthenware irrigation ditch.

Soar is contacting you to determine if you have any concerns regarding the proposed development. Pursuant to PRC § 21080.3.1 (d), you have **30 days** from the receipt of this letter to request consultation, in writing, with Soar. Should you have any concerns or knowledge of cultural resources in the specific project area, please contact me at hfroshour@soarhere.com or at (207) 232-8912 at your earliest convenience. If Soar does not hear from you within this time, we shall assume that you have no comments regarding this project.

Respectfully,

Heather Froshour, M.A., R.P.A.
Sr. Archaeologist
Soar Environmental Consulting, Inc.



SOAR ENVIRONMENTAL CONSULTING 1322 East Shaw Avenue, Suite 400 Fresno, CA 93710 www.soarhere.com 559.547.8884	Title Visalia Topographic Map Client 4Creeks	Address Subdivision Bounded by Shirk and Tulare roads and Roeben Street. APNs 087-010-006, 087-010-008.	Figure # 1 Topographic Map Revision Date 10/13/2023

Corporate Headquarters
1322 E. Shaw Avenue, Suite 400 Fresno, CA, 93710
www.soarhere.com • 559.547.8884

Monday, December 4, 2023

Santa Rosa Rancheria Tachi Yokut Tribe
P.O. Box 8
Lemoore, CA, 93245
Phone: (559) 423-3900
spowers@tachi-yokut-nsn.gov

RE: Proposed housing subdivision bounded by Shirk and Tulare roads and Roeben Street, Visalia, CA, 93277. APNs 087-010-006, 087-010-008.

Dear Shana Powers, THPO,

Below, please find a description of the proposed project, a map showing the project location, and the name of our project point of contact, pursuant to Public Resources Code (PRC) § 21080.3.1 (d).

The proposed project is situated on the Visalia, California (2021), USGS 7.5' Series Quadrangle. The 59.13-acre project area is located on APNs 087-010-006 and 087-010-008 and is bounded by Shirk and Tulare Roads and Roeben Street in Visalia, California. The project is for a proposed 224-unit housing development with a center at approximately WGS 84 11 N 287779 E 4021822 N.

4Creeks, Inc. has requested a Phase 1 Archaeological Resource Assessment (Phase 1) to determine the potential for cultural resources prior to development, pursuant to state and local laws, including the California Environmental Quality Act (CEQA) and Tulare County guidelines. Soar Environmental Consulting Inc. (Soar Environmental) proposes to complete the Phase 1 study for the present project.

An important element of a Phase 1 study is to identify sites, resources, or locations of cultural importance to the local Native American community. As part of the process, Soar Environmental contacted the Native American Heritage Commission (NAHC) on October 13 2023. On December 1, 2023, Soar received a response letter from the NAHC indicating **negative results** of the Sacred Lands File search. Furthermore, the NAHC identified your organization as a point of contact regarding potentially known recorded sites or cultural resources within Tulare County.

Soar contacted the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System on October 13, 2023. On October 23, 2023, SSJVIC revealed one (1) historic cultural resource within the project area. No archaeological sites, three (3) potentially historic isolated finds, and one (1) historical resource are known within the project area. Two (2) previous surveys have been conducted within the project area. Two (2) historic cultural resources were identified within the ½-mile search radius of the project area. No historic properties on federal, state, or local inventories have been evaluated within the project area. Seven (7) previous surveys have been conducted within a ½-mile radius of the project area. On November 18, 2023, Soar conducted an archeological pedestrian field survey of the project area. **One (1) historic resource** was identified during the field survey, the South Fork Persian Ditch earthenware irrigation ditch.

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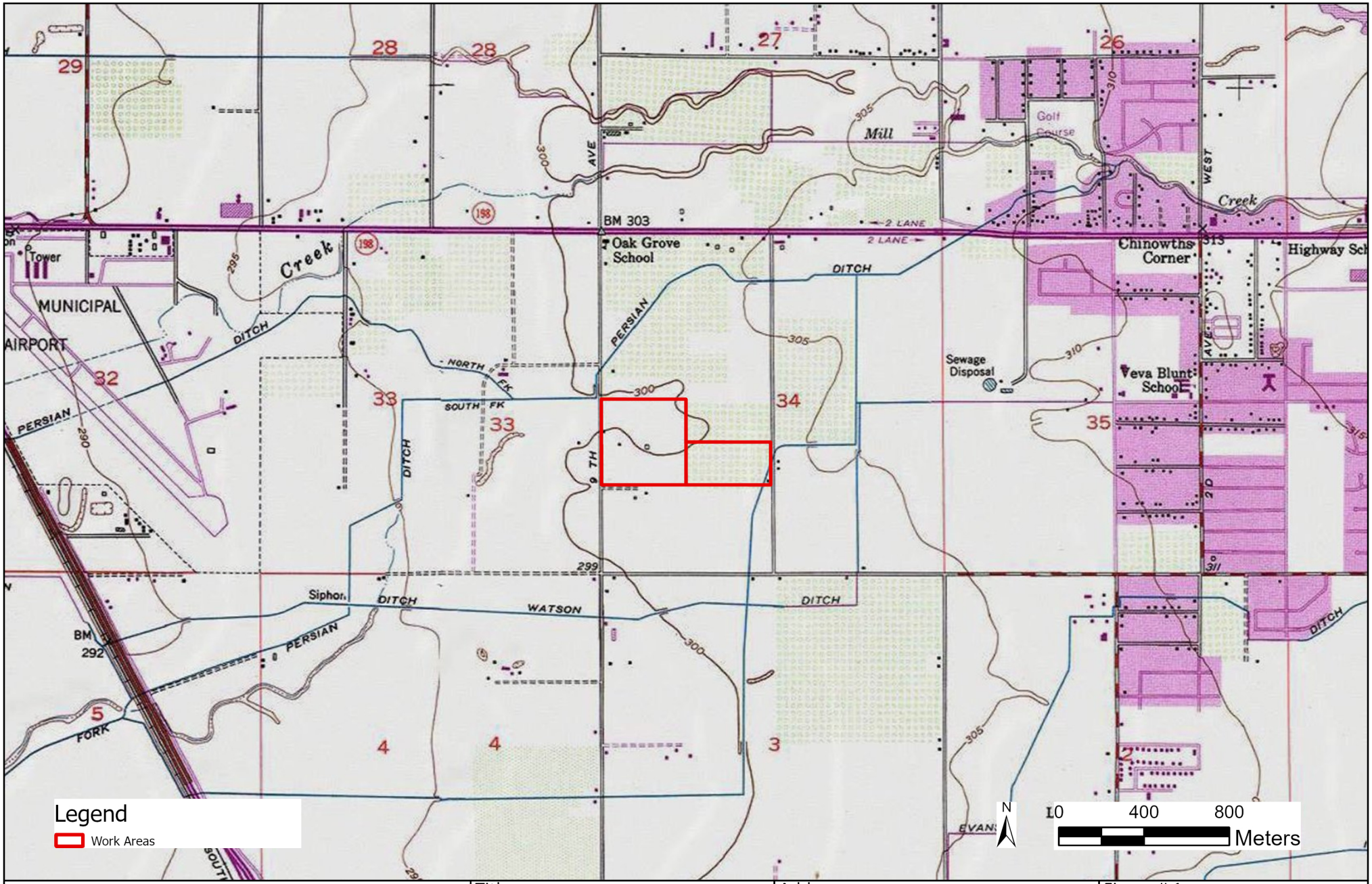
Respectfully,

Heather Froshour, M.A., R.P.A.
Sr. Archaeologist
Soar Environmental Consulting, Inc.



SOAR ENVIRONMENTAL CONSULTING 1322 East Shaw Avenue, Suite 400 Fresno, CA 93710 www.soarhere.com 559.547.8884	Title Visalia Topographic Map Client 4Creeks	Address Subdivision Bounded by Shirk and Tulare roads and Roeben Street. APNs 087-010-006, 087-010-008.	Figure # 1 Topographic Map Revision Date 10/13/2023

Corporate Headquarters
1322 E. Shaw Avenue, Suite 400 Fresno, CA, 93710
www.soarhere.com • 559.547.8884

Monday, December 4, 2023

Tule River Indian Tribe
P.O. Box 589
Porterville, CA, 93258
Phone: (559) 781-4271
neil.peyron@tulerivertribe-nsn.gov

RE: Proposed housing subdivision bounded by Shirk and Tulare roads and Roeben Street, Visalia, CA, 93277. APNs 087-010-006, 087-010-008.

Dear Neil Peyron, Chairperson,

Below, please find a description of the proposed project, a map showing the project location, and the name of our project point of contact, pursuant to Public Resources Code (PRC) § 21080.3.1 (d).

The proposed project is situated on the Visalia, California (2021), USGS 7.5' Series Quadrangle. The 59.13-acre project area is located on APNs 087-010-006 and 087-010-008 and is bounded by Shirk and Tulare Roads and Roeben Street in Visalia, California. The project is for a proposed 224-unit housing development with a center at approximately WGS 84 11 N 287779 E 4021822 N.

4Creeks, Inc. has requested a Phase 1 Archaeological Resource Assessment (Phase 1) to determine the potential for cultural resources prior to development, pursuant to state and local laws, including the California Environmental Quality Act (CEQA) and Tulare County guidelines. Soar Environmental Consulting Inc. (Soar Environmental) proposes to complete the Phase 1 study for the present project.

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Soar contacted the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System on October 13, 2023. On October 23, 2023, SSJVIC revealed one (1) historic cultural resource within the project area. No archaeological sites, three (3) potentially historic isolated finds, and one (1) historical resource are known within the project area. Two (2) previous surveys have been conducted within the project area. Two (2) historic cultural resources were identified within the ½-mile search radius of the project area. No historic properties on federal, state, or local inventories have been evaluated within the project area. Seven (7) previous surveys have been conducted within a ½-mile radius of the project area. On November 18, 2023, Soar conducted an archeological pedestrian field survey of the project area. **One (1) historic resource** was identified during the field survey, the South Fork Persian Ditch earthenware irrigation ditch.

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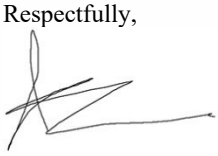
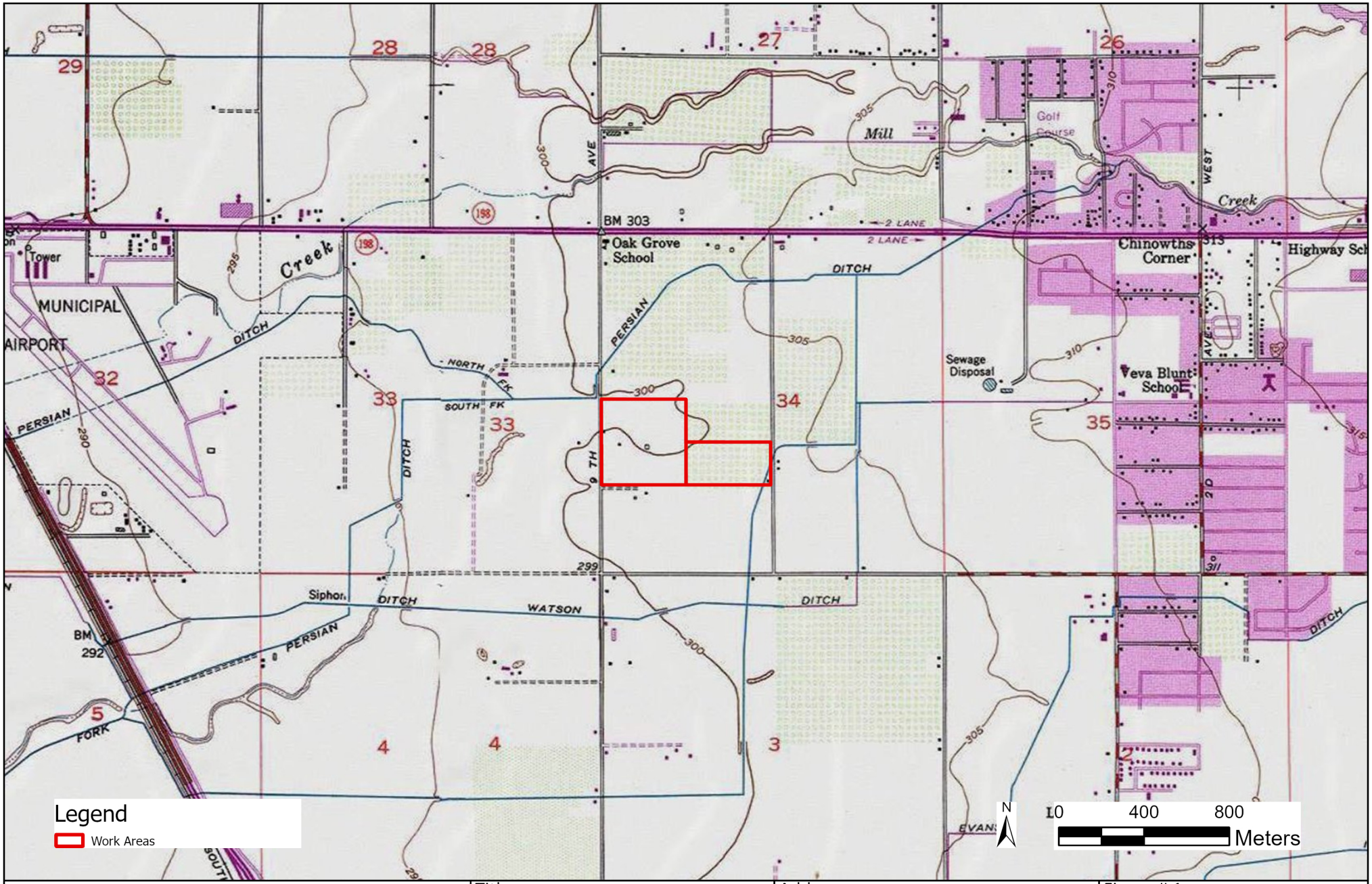
Respectfully,



Heather Froshour, M.A., R.P.A.
Sr. Archaeologist
Soar Environmental Consulting, Inc.



SOAR ENVIRONMENTAL CONSULTING 1322 East Shaw Avenue, Suite 400 Fresno, CA 93710 www.soarhere.com 559.547.8884	Title Visalia Topographic Map Client 4Creeks	Address Subdivision Bounded by Shirk and Tulare roads and Roeben Street. APNs 087-010-006, 087-010-008.	Figure # 1 Topographic Map Revision Date 10/13/2023

Corporate Headquarters
1322 E. Shaw Avenue, Suite 400 Fresno, CA, 93710
www.soarhere.com • 559.547.8884

Monday, December 4, 2023

Wuksachi Indian Tribe/Eshom Valley Band
1179 Rock Haven Ct.
Salinas, CA, 93906
Phone: (831) 443-9702
kwood8934@aol.com

RE: Proposed housing subdivision bounded by Shirk and Tulare roads and Roeben Street, Visalia, CA, 93277. APNs 087-010-006, 087-010-008.

Dear Kenneth Woodrow, Chairperson,

Below, please find a description of the proposed project, a map showing the project location, and the name of our project point of contact, pursuant to Public Resources Code (PRC) § 21080.3.1 (d).

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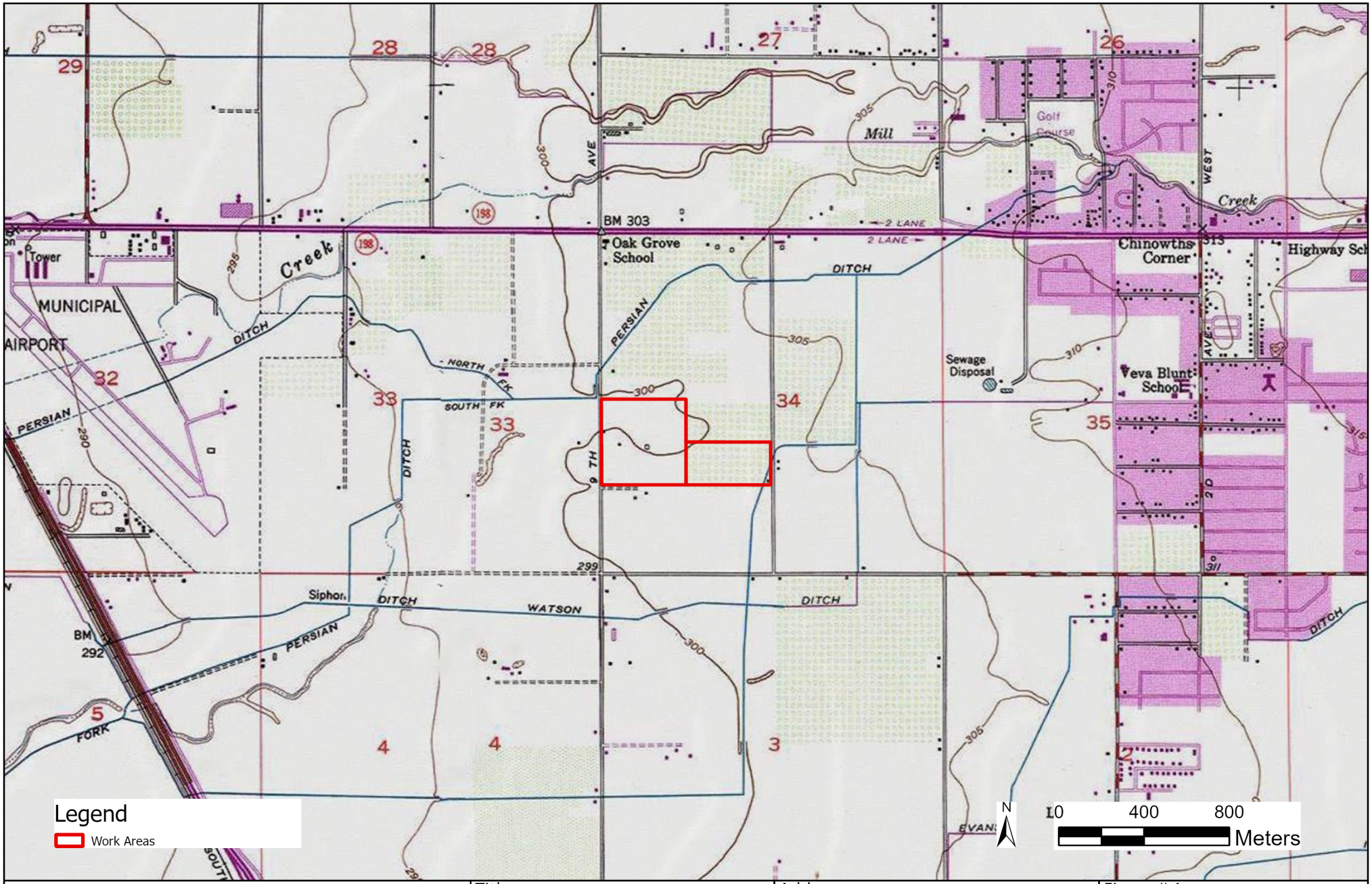
Respectfully,

Heather Froshour, M.A., R.P.A.
Sr. Archaeologist
Soar Environmental Consulting, Inc.



SOAR ENVIRONMENTAL CONSULTING 1322 East Shaw Avenue, Suite 400 Fresno, CA 93710 www.soarhere.com 559.547.8884	Title Visalia Topographic Map Client 4Creeks	Address Subdivision Bounded by Shirk and Tulare roads and Roeben Street. APNs 087-010-006, 087-010-008.	Figure # 1 Topographic Map Revision Date 10/13/2023

APPENDIX C

Feature and Isolate Forms

State of California ☐ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # P-54-002177
HRI #
Trinomial CA-TUL-003259H
NRHP Status Code

Other Review Code | Reviewer | Date | Listings

Page 1 **of** 4 ***Resource Name or #:** (Assigned by recorder) South Fork Persian Ditch
P1. Other Identifier: SFPP-23
***P2. Location:** ☐ **Not for Publication** X **Unrestricted**
***a. County** Tulare **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** Visalia **Date** 2021 **T** 19S ; **R** 24E ; SW ¼ **of** NE ¼ **of** SE ¼ **of Sec** 5 ; MD **B.M.**
c. Address 1537 S Roeben St City Visalia Zip 93277
d. UTM: (Give more than one for large and/or linear resources) Zone 11 , 288237 mE/ 4021635 mN
e. **Other Locational Data:** From Selma travel south on Highway 99, 2.4 miles past Exit 198. Site is west of Highway 99 and the railroad tracks and is visible from the road.

***P3a. Description:**
Earthen irrigation canal associated with agricultural activities in the City of Visalia. The canal flows in a northeast to southwest direction until it reaches the concrete headgate at S Roeben St, from that point it passes under S Roeben ST. and turns 90° to continue north. Once past W Howard Court the canal shifts to an east to west alignment before then turning north at W Tulare Ave to connect to the main Persian Ditch. Approximately 20' west of the railroad is a concrete culvert stamped with "1940". Resources are in good condition.

***P3b. Resource Attributes:** (List attributes and codes) HP20 Canal/Aqueduct

***P4. Resources Present:** ☐ Building X Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing



P5b. Description of Photo: (view, date, accession #) 43° NE @ 288185 mE / 4021621 mN

***P6. Date Constructed/Age and Source:** X Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
Persian Ditch Company
15370 Avenue 256
Visalia, CA 93292

***P8. Recorded by:** (Name, affiliation, and address) Heather Froshour
SOAR Environmental Consulting Inc
1322 E. Shaw Ave., Suite 400
Fresno, CA 93710

***P9. Date Recorded:**
11/18/2023

***P10. Survey Type:** (Describe)
Intensive Survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")
Froshour, Heather
2023 Phase I Cultural Resources Assessment Elliot Housing Subdivision Project, Visalia, CA 93277, Assessor Parcel Numbers 087-010-006, and 087-010-008 Tulare, County, California

***Attachments:** ☐NONE X Location Map ☐Continuation Sheet ☐Building, Structure, and Object Record
☐Archaeological Record ☐District Record X Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

L1. Historic and/or Common Name: South Fork Persian Ditch
L2a. Portion Described: □ Entire Resource X Segment □ Point Observation **Designation:**
b. Location of point or segment: WGS 84 **Zone:** 11N; **UTM:** 288255 mE / 4021770 mN (N end)
288182 mE / 4021627 mN (S end)

L3. Description:
The recorded segment measures approximately 518 feet long by 15 feet wide by 4 feet deep and is situated at an elevation range between 305 feet and 306 feet above sea level. During the current investigation, ASM investigated only that portion of the linear resource within the Project area, which runs in an east-west direction for approximately 0.75 mi. The ditch is earthen in construction and has contemporary irrigation features associated with it (i.e., concrete culverts, corrugated sheet metal culverts, sluice gates).

L4. Dimensions:
a. Top Width: approx. 15 feet
b. Bottom Width: approx. 5 feet
c. Height or Depth: approx. 4 feet
d. Length of Segment: approx. 518 feet

L4e. Sketch of Cross-Section: None

L5. Associated Resources: Unknown

L6. Setting: The resource is in a suburban/rural setting on the west edge of the city of Visalia with orchards to the north, residential neighborhoods to the east and south, and corn fields to the west.

L7. Integrity Considerations:

Period of Significance
The ditch was constructed between 1854 and 1856 by farmers and other water users holding stock in what is now the Persian Ditch Company, created in ca. 1936, to transport water from Mill Creek for irrigation purposes. If eligible, the South Fork Persian Ditch would have a period of significance from approximately 1854 to present. This date range is based on historic maps of the City of Visalia and Tulare County.

Significance
South Fork Persian Ditch is potentially significant under **Criterion A.** The ditch is a mostly unlined earthenware irrigation ditch used by the city of Visalia. The ditch does not represent a unique association with agricultural activities at the local, state, or national levels. The ditch is associated with events that have made a significant contribution to the broad patterns of our history as part of the earliest irrigation ditch systems in Visalia. South Fork Persian Ditch is not significant under **Criterion B**. because the ditch is not associated with the lives of significant persons in our past. The design and construction, as well as modifications, were not by any one individual or individuals in the city of Visalia with particular significance at the local, state, or national levels. South Fork Persian Ditch is not significant under **Criterion C**. because the use of the earth in the construction of irrigation ditches has been common for over 150 years in the region and has been used since the planting of agricultural fields in Visalia. The ditch does not embody the distinctive characteristics of a type, period, or method of construction, nor does it represent the work of a master, possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction. The ditch is constructed of common materials and has been repaired and modified using typical methods and technologies. South Fork Persian Ditch is not significant under **Criterion D**. because the ditch is not a significant or likely source of important information about the construction of irrigation ditches, agricultural fields, or the materials or technologies employed in their construction and operation.

Integrity
The South Fork Persian Ditch is potential significant under Criterion A and not significant under Criteria B-D. The ditch, however, have experienced changes in its alignment, alterations to its immediate and landscape surroundings (including suburbanization along certain of their segments and the construction of modern bridge crossings), and the replacement of its original water control features with modern equipment (such as concrete culverts and metal gates). The ditch therefore lacks integrity of original location, setting, design, materials and feeling and it cannot convey its historical association and is therefore not eligible for the NRHP. Integrity of location design, materials, and workmanship, setting, feeling, and association is relatively low within the period of significance.

L8a. Photograph, Map or Drawing



L8b. Description of Photo, Map, or Drawing: South Fork Persian Ditch, north portion of recorded segment with modern concrete culvert, facing northeast

L9. Remarks: None

L10. Form Prepared by:
Heather Froshour
SOAR Environmental Consulting Inc
1322 E. Shaw Ave., Suite 400
Fresno, CA 93710

L11. Date: 11/18/2023

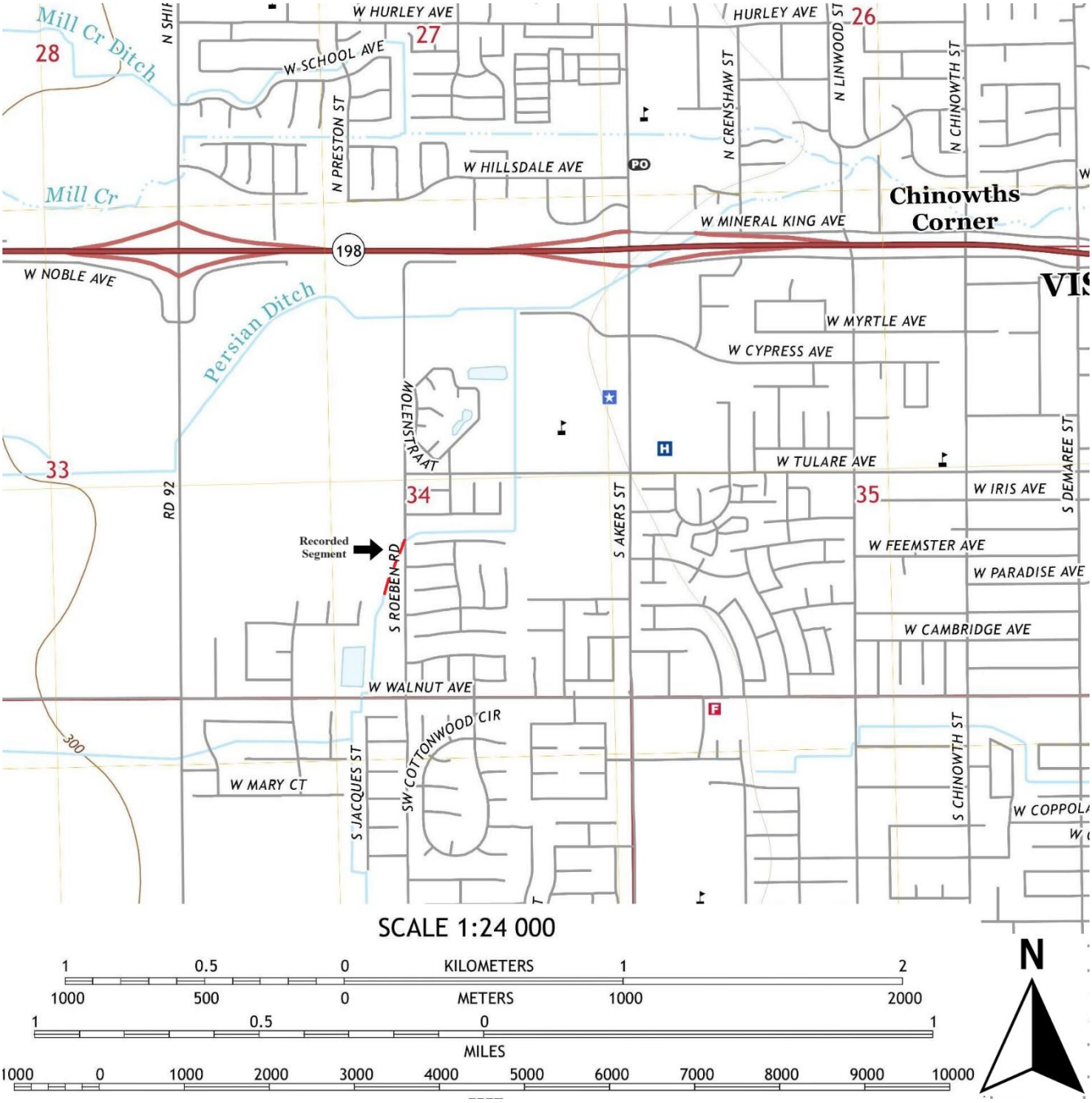
State of California □ Natural Resources Agency Primary #
DEPARTMENT OF PARKS AND RECREATION HRI#

LOCATION MAP

Trinomial

Page 4 of 4 ***Resource Name or #**_South Fork Persian Ditch

***Map Name:** USGS Topographic quadrangle Visalia ***Scale:** 1:24,000 ***Date of map:** 2021



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # P-54-002177
HRI #
Trinomial CA-TUL-003259H
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

*Resource Name or #: South Fork Persian Ditch

P1. Other Identifier:

*P2. Location:
a. County: Tulare ☐ Not for Publication ☒ Unrestricted
b. USGS 7.5' Quad: Visalia, CA Date: 1949 (1969) T 19S; R 24E; Sec 3 M.D. B.M.
c. Address: N/A
d. UTM WGS 84 Zone: 11N; Head: 288049 mE/ 4020604 mN
Terminus: 285181 mE/ 4020647 mN
e. Other Locational Data: Assessor Parcel Number 119-022-041

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

South Fork Persian Ditch is a mostly unlined earthen irrigation ditch, V-shape with steep side earthen berms to either side, and concrete lined when the ditch orientation turns 90 degrees. The ditch branches off from Watson Ditch and flows south and west for approximately 2.5 miles before terminating at the Persian Ditch. The ditch is located in a predominately agricultural setting, though the start of the ditch is located within a single-family residential neighborhood. The ditch is consistently maintained and is still currently for agricultural irrigation. The South Fork Persian Ditch is first visible on Thompson's 1892 map and 1927 USGS topographic map.

*P3b. Resource Attributes: HP20 Canal/Aqueduct

*P4. Resources Present: ☐Building ☒ Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing:



P5b. Description of Photo: South Fork Persian Ditch, facing south

*P6. Date Constructed/Age and Sources: ☒Historic ☐Prehistoric ☐Both

*P7. Owner and Address:
Persian Ditch Company
15370 Avenue 256
Visalia, CA 93292

*P8. Recorded by:
Consuelo Y. Sauls
Taylored Archaeology
6083 N. Figarden Dr., Ste. 616
Fresno, CA 93722

*P9. Date Recorded: 7/9/2022

*P10. Survey Type: Intensive Survey

*P11. Report Citation:
Sauls, Consuelo Y.
2022 *Cultural Resource Assessment for Barr and Wood Tentative Subdivision Map Project, Tulare County* Taylored Archaeology, Fresno, California. Prepared for 4Creeks, Inc. Visalia, California.

*Attachments: ☐NONE ☒Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☒Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LINEAR FEATURE RECORD

Primary # P-54-002177
HRI #
Trinomial CA-TUL-003259H

 Resource Name or #: South Fork Persian Ditch

L1. Historic and/or Common Name: South Fork Persian Ditch
L2a. Portion Described: ☐ Entire Resource ☒ Segment ☐ Point Observation **Designation:**
b. Location of point or segment: WGS 84 **Zone:** 11N; **UTM:** 288096 mE/ 4020414 mN (S end)
288047 mE/ 4020604 mN (N end)

L3. Description: This recorded segment of the South Fork Persian Ditch measures approximately 770 linear feet and is an unlined V-shared earthen irrigation ditch with earthen berms to either side. The north end of this recorded segment runs west to east before turning 90 degrees to the south and terminating at an unnamed earthern bridge over the ditch. Two 90 degree turns at the northern end of this recorded segment are concrete-lined at the turns to prevent erosion and scouring.

L4. Dimensions:

a. Top Width: approx. 15 feet
b. Bottom Width: approx. 5 feet
c. Height or Depth: approx. 4 feet
d. Length of Segment: approx. 770 feet

L4e. Sketch of Cross-Section: None

L5. Associated Resources: Unknown

L6. Setting: The resource is in a rural setting surrounded by wheat fields to the east and west, and single family residences to the north.

L7. Integrity Considerations: This recorded segment of the South Fork Persian Ditch has been twice modified from its original northeast to southwest alignment: first it was modified to a north to south alignment between 1937 and 1946 (Lodge 2020; USAAA 1946) and second, the northern-most portion of the ditch was modified to a west to east alignment between 2003 and 2004 (Google Earth (2022).

L8a. Photograph, Map or Drawing



L8b. Description of Photo, Map, or Drawing South Fork Persian Ditch, northern portion of recorded segment, facing east.

L9. Remarks:

L10. Form Prepared by:
Consuelo Sauls
Taylored Archaeology
6083 N. Figarden Dr., Ste. 616
Fresno, CA 93722

L11. Date: 7/9/2022

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

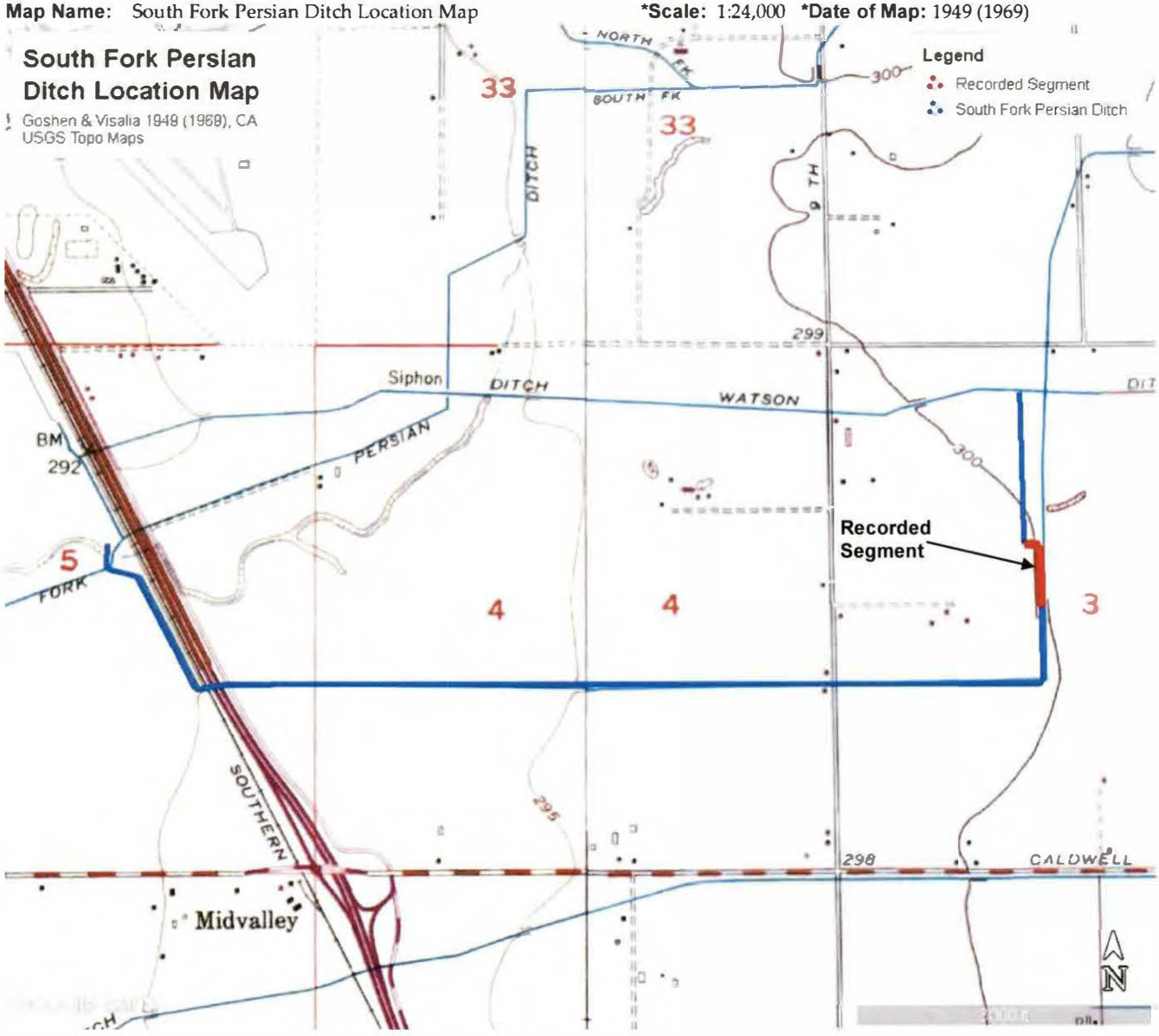
LOCATION MAP

Primary # P-54-002177
HRI#
Trinomial CA-TUL-003259H

*Resource Name or #: South Fork Persian Ditch

Map Name: South Fork Persian Ditch Location Map

*Scale: 1:24,000 *Date of Map: 1949 (1969)



SCALE 1 24 000

1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 KILOMETER

CONTOUR INTERVAL 5 FEET
DATUM IS MEAN SEA LEVEL

*Required information

P-54-002177

CA-TUL-003259H

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # P-54-002177
HRI #
Trinomial
NRHP Status Code
Other Listings
Review code Reviewer Date

Page 1 of 2 *Resource Name or #: (Assigned by recorder)
P1. Other Identifier: SFPP-23
*P2. Location: ☐ Not for Publication ☒ Unrestricted *a. County Tulare
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Goshen Date 1969 T 19S; R 24E; SW 1/4 of NE 1/4 of SE 1/4 of Sec 5; MD B.M.
c. Address 334C City Zip
d. UTM: (Give more than one for large and/or linear resources) Zone 11, 285540 mE/ 4020045 mN
e. Other Locational Data (e.g., parcel #, legal description, directions to resource, elevation, etc., as appropriate):
From Selma travel south on Highway 99, 2.4 miles past Exit 198. Site is west of Highway 99 and the railroad tracks and is visible from the road.

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
Earthen irrigation canal associated with orchard. Canal flows in an east to west direction until it reaches the concrete headgate, from that point it turns 90° and continues north. Approximately 20' west of the railroad is a concrete culvert stamped with "1940". Resources are in good condition.

*P3b. Resource Attributes: (List attributes and codes) HP20
*P4. Resources Present: ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo (view, date, accession #) East; 4-26-95; SFPP-CW-3-24



*P6. Date Constructed/Age and Sources: ☒ Historic
☐ Prehistoric ☐ Both

*P7. Owner and Address:

*P8. Recorded by (Name, affiliation, and address): Carrie D. Wills & Allen Estes; William Self Associates 4 Orinda Way Suite 200A Orinda, CA 94563

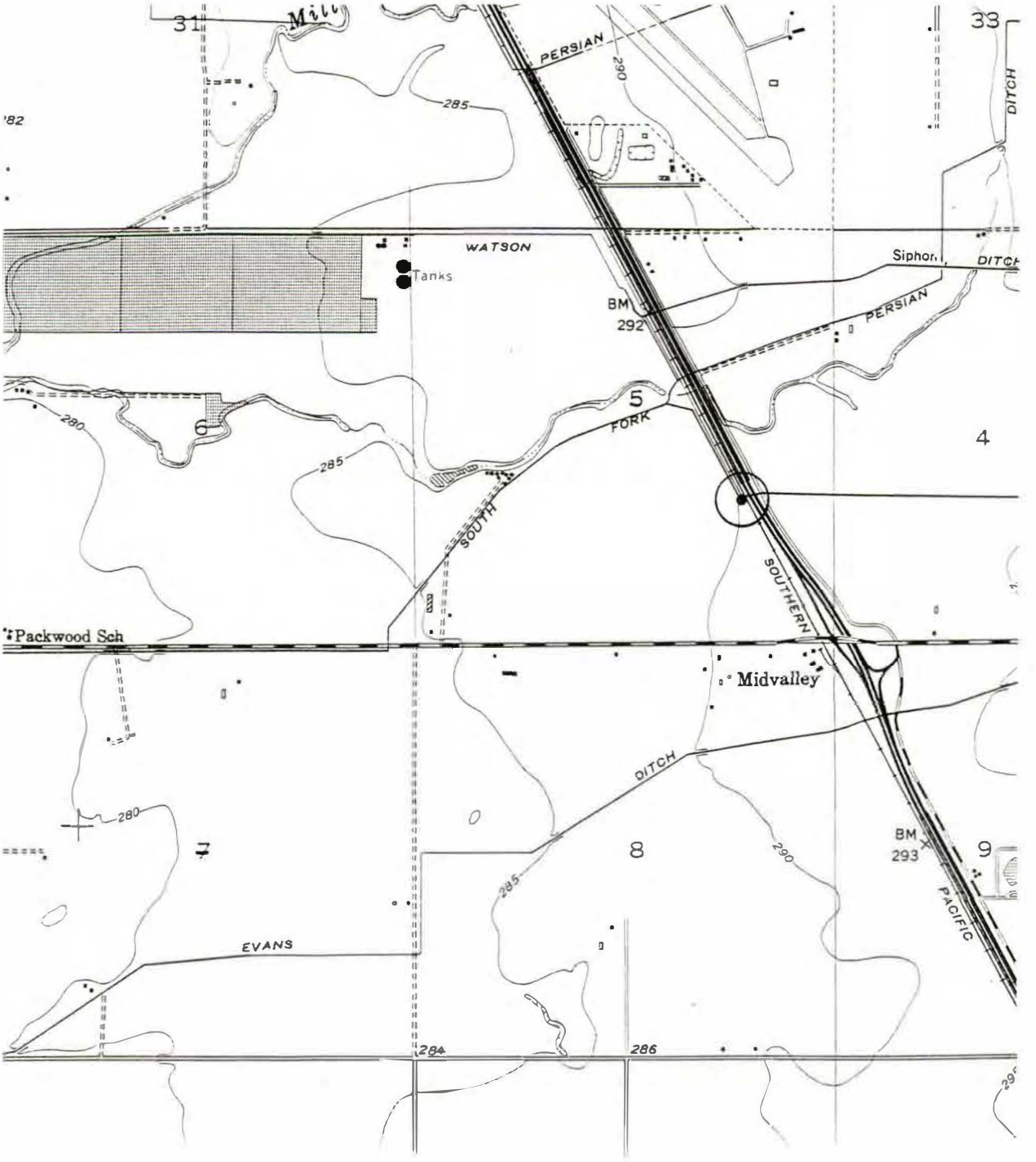
*P9. Date Recorded: April 26, 1995

*P10. Survey Type: (Describe)
Reconnaissance.

*P11. Report Citation (Cite survey report and other sources, or enter "none."):
Class I Overview Santa Fe Pacific Pipeline Partners, L.P., Proposed Concord to Colton Pipeline Project.

*Attachments: ☐ NONE ☒ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record
☐ Archaeological Record ☐ District Record ☐ Linear Resource Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☐ Other (List):

P-54-002177
CA-TUL-003259H



GOSHEN, CALIF.

7.5' QUADRANGLE

1949

PHOTOREVISED 1969

0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

N

CONTOUR INTERVAL 5 FEET

DATUM IS MEAN SEA LEVEL

Santa Fe Pacific Pipeline

Concord to Colton Project

Location Map

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P-54-002177
CA-TUL-003259H

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # P-54-002177
HRI #
Trinomial
NRHP Status Code
Other Listings
Review code Reviewer Date

Page 1 of 2 *Resource Name or #: (Assigned by recorder) South Fork Persian Ditch
P1. Other Identifier: SFPP-22
*P2. Location: ☐ Not for Publication ☒ Unrestricted *a. County Tulare
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Goshen Date 1969 T 19S; R 24E; NE 1/4 of SW 1/4 of NE 1/4 of Sec 5; MD B.M.
c. Address 334C City Zip
d. UTM: (Give more than one for large and/or linear resources) Zone 11, 285305 mE/ 4020495 mN
e. Other Locational Data (e.g., parcel #, legal description, directions to resource, elevation, etc., as appropriate):
From Selma travel south on Highway 99, 2.1 miles past 198 exit. Site is west of Highway 99 and railroad tracks.

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
Earthen irrigation ditch flowing east to west, associated with an orchard and other agricultural land. A galvanized pipe culvert supports the railroad over the ditch. The ditch goes underground west of Highway 99 and resurfaces on the east side of the highway. Approximately 250' west of the railroad tracks is a concrete headgate. Large oak trees and dense riparian vegetation grow on the banks of the ditch. The resources are in good ocndition.

*P3b. Resource Attributes: (List attributes and codes) HP20
*P4. Resources Present: ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo (view, date, accession #) West; 4-26-95; S. FPP-CW-3-21



*P6. Date Constructed/Age and Sources: ☒ Historic
☐ Prehistoric ☐ Both

*P7. Owner and Address:

*P8. Recorded by (Name, affiliation, and address): Carrie D. Wills & Allen Estes; William Self Associates 4 Orinda Way Suite 200A Orinda, CA 94563

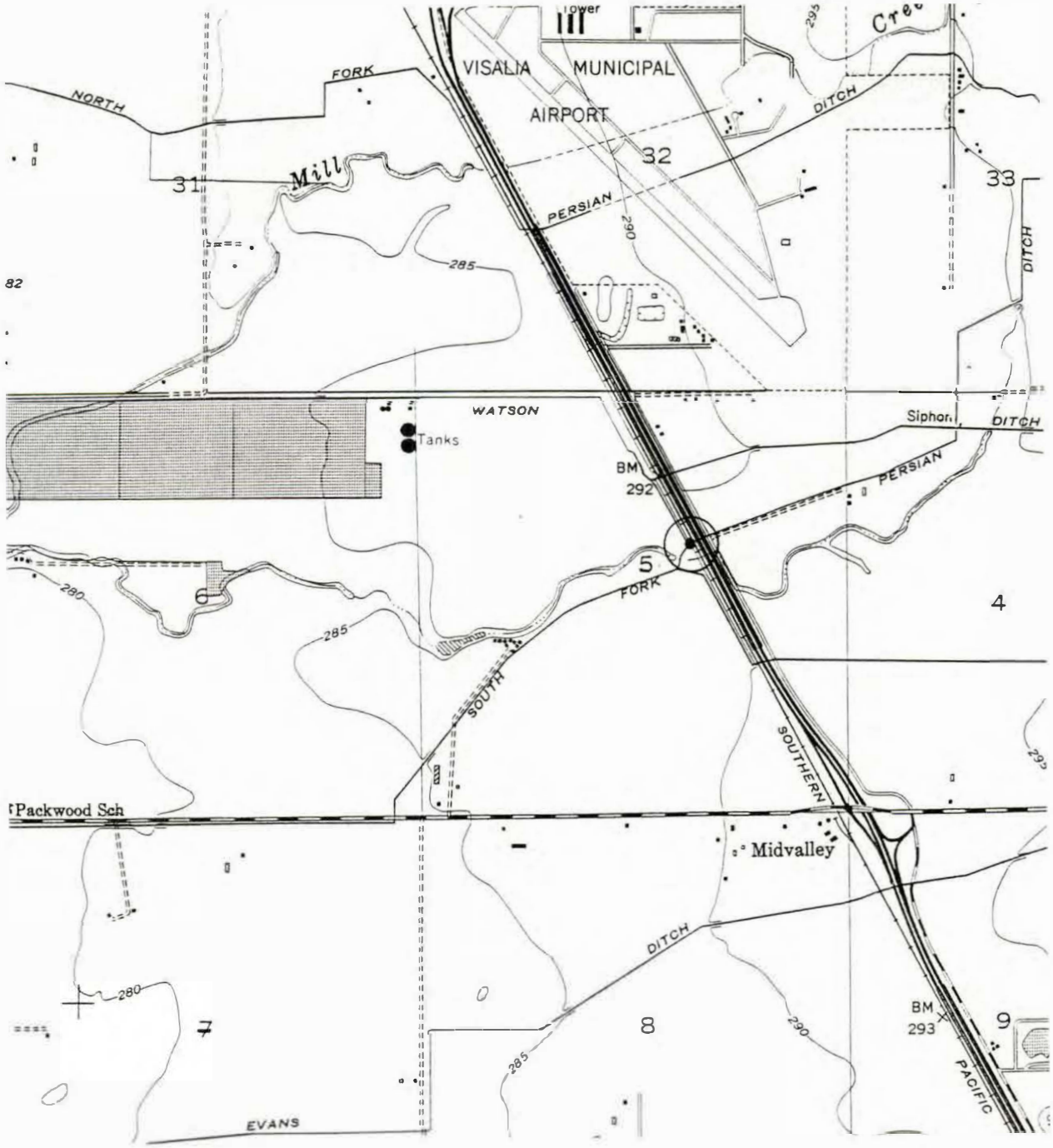
*P9. Date Recorded: April 26, 1995

*P10. Survey Type: (Describe)
Reconnaissance.

*P11. Report Citation (Cite survey report and other sources, or enter "none."): Class I Overview Santa Fe Pacific Pipeline Partners, L.P., Proposed Concord to Colton Pipeline Project.

*Attachments: ☐ NONE ☒ Location Map ☐ Sketch Map
☐ Continuation Sheet ☐ Building, Structure, and Object Record
☐ Archaeological Record ☐ District Record ☐ Linear Resource Record
☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☐ Other (List):

P-54-002177
CA-TUL-003259H



GOSHEN, CALIF.

7.5' QUADRANGLE
1949
PHOTOREVISED 1969

0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

N

CONTOUR INTERVAL 5 FEET
DATUM IS MEAN SEA LEVEL

Santa Fe Pacific Pipeline
Concord to Colton Project

Location Map

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www.soarhere.com • 559.547.8884

CULTURAL ISOLATED FIND RECORD
Resource ID (Isolated Find #): IS-01-2023
Project Name: 4Creeks Elliot SJVH

Visit Details	
Isolated Find Number	IF-01-2023
Project Name	4Creeks Elliot SJVH
Project Number	N/A
Date Identified	11/18/2023
Recorded By (name[s], affiliation)	Heather Froshour, SOAR Environmental
Artifact(s) Collected?	No
UTMs (or other locational information):	WGS 84 11N 287998 mE / 4021717 mN
Archaeological Data: (include artifact description[s], dimensions, setting and relevant comments)	
Ceramic, refined earthenware, white glaze with blue band, thick possible serving dish/platter sherd	

Attachments:



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CULTURAL ISOLATED FIND RECORD
Resource ID (Isolated Find #): IS-02-2023
Project Name: 4Creeks Elliot SJVH

Visit Details	
Isolated Find Number	IF-02-2023
Project Name	4Creeks Elliot SJVH
Project Number	N/A
Date Identified	11/18/2023
Recorded By (name[s], affiliation)	Heather Froshour, SOAR Environmental
Artifact(s) Collected?	No
UTMs (or other locational information):	WGS 84 11N 287768 mE / 4022028 mN
Archaeological Data: (include artifact description[s], dimensions, setting and relevant comments)	
Ceramic, refined earthenware body sherd, cream/yellow colored glaze	

Attachments:



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CULTURAL ISOLATED FIND RECORD
Resource ID (Isolated Find #): IS-03-2023
Project Name: 4Creeks Elliot SJVH

Visit Details	
Isolated Find Number	IF-03-2023
Project Name	4Creeks Elliot SJVH
Project Number	N/A
Date Identified	11/18/2023
Recorded By (name[s], affiliation)	Heather Froshour, SOAR Environmental
Artifact(s) Collected?	No
UTMs (or other locational information):	WGS 84 11N 287556 mE / 4021852 mN
Archaeological Data: (include artifact description[s], dimensions, setting and relevant comments)	
Ceramic, refined earthenware sherd, light cream colored glaze, possible platter sherd	

Attachments:



APPENDIX D

Staff Resume



Heather Froshour

Senior Archaeologist

12 Years of Relevant Experience

Biography

Ms. Froshour's background emphasises archaeology, anthropology, and cultural resources monitoring.

Education

- M.A. in Historical Archaeology, November 2014. University of Leicester, Leicester, UK.
- B.A. in Anthropology/Geography, June 2010. University of Southern Maine, Gorham/Portland, ME.

Professional Development

- 8 hr training in Wilderness Firest Aid (Sierra Rescue International)
- Adult, Child, Infant C.A.R.E. CPR & First Aid Training (Sierra Rescue International)
- Driver/Operator

Professional Affiliations

- Register of Professional Archaeologists
- CHRIS Qualified Archaeologist
- Society of American Archaeology - SAA
- Society of Historical Archaeology - SHA

Technical Expertise

- Lithic Analysis
- Technical Report Writing
- Lab analysis
- Cultural Monitoring
- Site Surveying – Phases 1-3
- Excavation
- Metal Detection
- Auguring
- Research
- MS Office
- Collector for ArchGIS

Practical Experience

Ms. Froshour is a registered professional archaeologist and cultural resources specialist with extensive experience in field and technical work. This experience including cultural resources monitoring, site survey, phase 1-3 excavations, and anthropology on various projects throughout the United States. She has a combined 8 years of experience in academic, consulting, museum, and public archaeology, and has worked in CRM since 2013 throughout various regions of the United States. Primary states of focus have included Maine, Massachusetts, Louisiana, Georgia, Virginia, Arizona, and California. She routinely assesses cultural resources for project related effects and their significance, provides cultural resource mitigation services, directs archaeological surveys of both excavation and pedestrian methods, and prepares documents for Section 106 of the NHPA, CEQA, and NRHP. Ms. Froshour also has experience working alongside trial monitors through survey with in the Colorado River and Mendocino National Forest regions. She has worked alongside the USDA Forest Service to provide post-fire monitoring and mitigation recommendations.

Ms. Froshour is certified by the Register for Professional Archeologists (Registrant ID: 5457).

Highlighted Projects

California High-Speed Rail Authority Construction Package 1, Cultural Resources Support, March 2023-Present
Heather is the Cultural Resources Support for this construction package. As such, she oversees staff archaeologist cultural reporting, monitoring, and artifact processing on the 33-mile right of way in Fresno and Madera Counties.

SOAR Environmental Consulting, Senior Archaeologist, January 2023-Present
Senior Archaeologist, Phase I Cultural Resources Evaluation, Yokuts Valley, California
Provided desktop research, tribal consultation, and full Phase 1 report for the construction a new saber transmission tower to accompany existing USACE and CAL FIRE structures on a 100 square feet area on top of Bear Mountain in Fresno County.

Senior Archaeologist, Phase I Cultural Resources Evaluation, Shirley Meadows, California
Provided desktop research, tribal consultation, and full Phase 1 report with DPR forms for the construction a new saber transmission tower, and concrete masonry shelter enclosed in an 8 foot tall wire fence on a 100 square feet area on top of Shirley Peak in Kern County.

Senior Archaeologist, Phase I Cultural Resources Evaluation, Mountain Ranch, California
Provided desktop research, tribal consultation, and full Phase 1 report with DPR forms for the construction a new saber transmission tower, and propane tank enclosed in an 8 foot tall wire fence on a 100 square feet area on top of Quiggs Mountain in Calaveras County.

Senior Archaeologist, Phase I Cultural Resources Assessment, Glennville, California
Provided desktop research, site pedestrian survey, tribal consultation, and full Phase 1 report for the construction a new saber transmission tower, CMU block shelter, and parking lot enclosed in a wire fence on a 100 square feet area on top of Mount Pheasant in Kern County.

Senior Archaeologist, Phase I Cultural Resources Assessment, Bakersfield, California
Provided desktop research, site pedestrian survey, and full Phase 1 report for rezoning project and multiple family residence construction project.

Senior Archaeologist, Phase I Cultural Resources Assessment, Joshua Tree, California
Provided desktop research, site pedestrian survey, and full Phase 1 report for upscale yurt campground construction project.

Post Fire Fuels and Priority Heritage Asset Assessment Surveys, Grindstone Region, CA (June 2022-December 2022). The Great Basin Institute, Archaeological Crew Lead.
Phase I pedestrian surveys and site recording on post-wildfire burned landscapes within the Mendocino National Forest. Overseeing a small crew in the field survey, site recording, and completion of extensive USDA Forest Service site reports and mapping of cultural resources in the area. Ensured that all pertinent data is documented and reported to Forest Services standards with specific attention to current field conditions, disturbances, vegetation, terrain, and geospatial data of cultural resources. Provided day to day support of the crew and worked as a liaison between the Great Basin Institute and Mendocino National Forest personnel. Conducted Section 106 and Section 110 Priority Heritage Asset assessments of archaeological resources throughout the eastern region of the Mendocino. Assisted in final Phase 1 survey report writing.

Various Cultural Resource Management Survey Projects, GA & NC (June 2021- April 2022). TerraXplorations, Inc., Archaeology Field Director.
Phase I shovel testing in various locations throughout Georgia, in addition to a single project just outside of Raleigh, NC. These projects include road, bridge, and culvert improvement surveys as well as solar tract, farm, and generator surveys. All projects were conducted in 30m intervals along transect within the ESB of the survey area. All positive shovel tests were then delineated in 15m interval cruciform to determine site boundaries. Several projects required the use of metal detection grids in order to thoroughly survey areas of known Civil War activity. A number of projects for the Georgia Department of Transportation also required the probing of areas within the project ESB that were located within 1km from a known cemetery, with potential anomalies delineated and all results fully recorded. Duties include overseeing and directing field crews in locating, collecting, recording, and interpreting data from the survey. The supervision of personnel, including aiding in hiring and firing, performance reviews, training, work allocation, and problem resolution. Ensuring safe work practices and directing morning safety meetings to address potential hazards and safety concerns in the areas scheduled for fieldwork that day. Participation in field and office meetings with PIs and company owners to address scheduling and management procedures based on client needs as well as those of state and federal regulations and requirements.

Cultural Resource Management Survey Project, VAM-1 and Glasgow Pipeline Replacement, VA (May 2021-June 2021). TerraXplorations, Inc., Archaeology Crew Chief.
Phase I shovel test excavations from the replacement of the VAM-1 and Glasgow natural gas pipelines in the Blue Ridge Mountains, near the Appalachian Trail. Evaluated and conducted field work in various conditions in primarily mountainous terrain. Under direct supervision helped to manage and organize field crew in order to complete the project in a timely and efficient manner. Maintained field equipment and assisted in the writing and compilation of

all field paperwork. Personally in charge of the majority of all mappings of and oversight of field crew for sites throughout the project area.

Various Cultural Resource Management Survey Projects, LA & MS (August 2020-May 2021). TerraXplorations, Inc., Archaeology Field Technician.
Phase I shovel test excavations for bank mitigation in North Eastern Mississippi along the Buttahatchee River. Phase III survey of two projects; the historic St. Amelia Plantation in Welcome, Louisiana and an unnamed prehistoric village in Plaquemine, Louisiana. The phase III projects both required excavating the foundations of various structures, and in the case of the prehistoric site excavating and mapping postholes within pits. The projects also required drawing plan views, and stratigraphic profiles, as well as feature and level write-ups. Unit excavations included 1mx1m to 3mx3m units, with a few requiring the extension of existing units to chase out observed features and artifact clusters.

Various Cultural Resource Management Survey Projects, ID & WI (June 2020 -July 2020). Tetra Tech, Inc., Archaeology Field Technician.
Phase I pedestrian surveying of various wind and solar farm projects throughout corn and soybean fields.

Cultural Resource Management Survey, Acadiana to Gillis, LA (January 2020-March 2020). BGE, Inc., Archaeology Field Technician.
Phase I shovel test excavations of proposed natural gas pipeline between Acadian and Gillis, Louisiana. This project entailed the excavation of 30mx30m units with distance varying based on HPA and LPA guidelines (a spacing of 30m to 50m respectively). A requirement of the survey was to maintain daily investigation point forms for individual shovel test units. In addition to this, it was required to aid in recording artifacts and photos of sites found throughout the project.

Various Cultural Resource Management Survey Projects, MN & IA (November 2019-December 2019). In Situ Archeological Consulting LLC, Archaeology Field Technician.
Phase I pedestrian surveying of various natural gas and cellular tower projects, as well as Phase II field work entailing the excavation of 45cmX45cm test units and GPS data collection. The projects also occasionally required the writing of site forms, and research for future projects at the Minnesota SHPO collections.

Cultural Resource Management Survey, Ten West Link Project, CA & AZ (August 2019-October 2019). POWER Engineers Inc., Archaeology Field Technician.
Phase I pedestrian survey of the proposed 500 kV transmission line connecting electrical substations in Tonopah, Arizona and Blythe, California. This project entailed working in one of five teams, and often included 1-2 tribal monitors from the Colorado River Indian Tribes. The right of way crews used a 400ft buffer for the corridor, with each team using a 15m spread to survey the proposed transmission line. This survey required the use of a Trimble GPS system to navigate the corridor and plot both isolate and site locations for GIS and recording crew use. As part of the recording crew later in the survey, it was also required to conduct thorough site analysis and recordation via site forms and Trimble points of each observed artifact and feature, both historic and prehistoric.

Authored Publications

2023 Froshour, Heather. “Phase I Cultural Resources Evaluation: 30811 Bear Mountain Rd., Yokuts Valley, California.”

2023 Froshour, Heather. “Phase I Cultural Resources Evaluation: Shirley Peak, Rd. 622, Kern County, California.”

2023 Froshour, Heather. “Phase I Cultural Resources Evaluation: Sierra Vista Lookout., Quiggs Mountain, Mountain Ranch, California.”

2023 Froshour, Heather. “Phase I Cultural Resources Evaluation: Granite Rd., Mount Pheasant, Glennville, California.”

2023 Froshour, Heather. “Phase I Cultural Resources Assessment: 4415 Wilson Rd., Bakersfield, California.”

2023 Froshour, Heather. “Cultural Resources Desktop Assessment: 1941 N. Golden State Blvd., Fresno, California."

2023 Froshour, Heather. “Phase I Cultural Resources Assessment: 3174 Bonair Ave., Joshua Tree, California.”

2023 Froshour, Heather. “Cultural Resources Desktop Assessment: 3200 Rio Linda Blvd., Sacramento, California."

2023 Hawley, Maria and Froshour, Heather. “Cultural Resources Assessment, 18644 16th Ave., Stratford, California.”

2022 Lashway, Nick, Hovis, Chad, and Froshour, Heather. “Upper Thomes Forestwide Fuels Phase I Report: U.S.D.A. Forest Service Mendocino National Forest Covelo and Grindstone Ranger Districts, California.”

Academic Publications

2013 Hamilton, Nathan D. and Froshour, Heather D (presenter). “Explore 5,000 Years of History in Danvers, Massachusetts.”

2013 Froshour, Heather D. “Preserving the Past: Public and Historical Archaeology at the Rebecca Nurse Homestead, Danvers, Massachusetts.”

2012 Froshour, Heather D (presenter). “17th-18th Century Occupations in Danvers, Massachusetts.”

Appendix D

Traffic Study

Project No: 624-03

TRAFFIC STUDY

ELLIOT PROPERTY TENTATIVE SUBDIVISION
LOCATED EAST OF SHIRK STREET AND SOUTH OF TULARE AVENUE
VISALIA, CALIFORNIA

Prepared for:

4CREEKS

December 2023

UPDATED June 2024

Prepared by:

RUETTGERS & SCHULER CIVIL ENGINEERS

1800 30TH STREET, SUITE 260
BAKERSFIELD, CA 93301



Ian J. Parks, RCE 58155



TABLE OF CONTENTS

Pg
EXECUTIVE SUMMARY 2
INTRODUCTION 6
FIGURE 1: VICINITY MAP 7
FIGURE 2: LOCATION MAP 8
FIGURE 3: SITE PLAN 9
PROJECT TRIP GENERATION AND DESIGN HOUR VOLUMES 11
TABLE 1a: PHASE I PROJECT TRIP GENERATION 11
TABLE 1b: FULL BUILD-OUT PROJECT TRIP GENERATION 11
TABLE 2: PROJECT TRIP DISTRIBUTION 12
EXISTING AND FUTURE TRAFFIC 12
FIGURE 4: PROJECT PEAK HOUR TRAFFIC (EXISTING) 13
FIGURE 5: PROJECT PEAK HOUR TRAFFIC (FUTURE) 14
FIGURE 6: 2023 PEAK HOUR TRAFFIC 15
FIGURE 7: 2028 PEAK HOUR TRAFFIC 16
FIGURE 8: 2028+PROJECT PEAK HOUR TRAFFIC 17
FIGURE 9: 2033 PEAK HOUR TRAFFIC 18
FIGURE 10: 2033+PROJECT PEAK HOUR TRAFFIC 19
INTERSECTION ANALYSIS 20
TABLE 3a: PM INTERSECTION LEVEL OF SERVICE 21
TABLE 3b:AM INTERSECTION LEVEL OF SERVICE 22
TRAFFIC SIGNAL WARRANT ANALYSIS 23
TABLE 4: 8-HOUR TRAFFIC SIGNAL WARRANTS 23
QUEUE LENGTH ANALYSIS 24
TABLE 5a: PM QUEUE LENGTH ANALYSIS 24
TABLE 5b: AM QUEUE LENGTH ANALYSIS 25
DECELERATION LANE ANALYSIS 25
ACCIDENT INVESTIGATION 26
MITIGATION 27
TABLE 6: FUTURE INTERSECTION IMPROVEMENTS AND LOCAL MITIGATION 27
VEHICLE MILES TRAVELED (VMT) ANALYSIS 27
REFERENCES 28
APPENDIX 29

EXECUTIVE SUMMARY

The proposed residential development is located east of Shirk Street and south of Tulare Avenue in Visalia, CA.

Project Description

The proposed project includes 225 single-family residential dwelling units. Access will be provided along Shirk Road, Tulare Road, and Roeben Street.

Project Trip Generation

The following table shows the anticipated project trip generation and peak hour volumes calculated using the Institute of Transportation Engineers (ITE) Trip Generation, 11th Edition.

Project Trip Generation

General Information			Daily Trips		AM Peak Hour Trips			PM Peak Hour Trips		
ITE Code	Development Type	Variable	ADT RATE	ADT	Rate	In % Split/ Trips	Out % Split/ Trips	Rate	In % Split/ Trips	Out % Split/ Trips
210	Single-Family detached Housing	225 Dwelling Units	eq	2128	eq	25% 39	75% 117	eq	63% 134	37% 79

Project Study Scope

The project study scope was approved by the City of Visalia on October 20, 2023. Based on the number of peak hour trips calculated (between 200-499 residential trips in the peak hour), the study falls into Category II traffic impact analysis. Category II requires all signalized and major intersections be studied within a 1/2-mile radius of the project.

Following are the intersections included in the study:

Study Intersections:

- Road 92/Shirk Street & State Route 198 Eastbound Ramps
- Road 92/Shirk Street & State Route 198 Westbound Ramps
- Road 92/Shirk Street & Tulare Avenue
- Road 92/Shirk Street & Walnut Avenue
- Roeben Street & Tulare Avenue
- Roeben Street & Walnut Avenue
- Street 3 & Tulare Avenue
- Street 6 & Tulare Avenue
- Avenue 4 & Shirk St
- Avenue 6 & Roeben St

Analysis Scenarios

In accordance with Category II requirements, analysis will be provided for the following scenarios:

- Existing
- 2028 Cumulative (Opening Year)
- 2028 Cumulative + Project
- 2028 Cumulative + Project with Mitigation (if applicable)
- 2033 Cumulative
- 2033 Cumulative + Project
- 2033 Cumulative + Project with Mitigation (if applicable)

Level of Service Analysis

PM Peak Hour Intersection Analysis

#	Intersection	Control Type	2023	2028	2028+ Project	2028+ Project w/Mitigation	2033	2033+ Project	2033+ Project w/Mitigation
1	Shirk St & SR 198 WB Ramps	AWSC	E (43.0)	F (118.7)	F (204.8)	-	F (238.1)	F (>300)	-
		Signal	-	-	-	B	-	-	B
2	Shirk St & SR 198 EB Ramps	AWSC	C	D (27.2)	D (28.1)	-	F (52.2)	F (56.2)	-
		Signal	-	-	-	B	-	-	B
3	Shirk St & Tulare Ave	WB	-	B	B	-	B	B	-
4	Roeben St & Tulare Ave	WB EB	A -	B A	B A	- -	B B	B B	- -
5	Shirk St & Walnut Ave	AWSC	C	E (44.7)	E (49.0)	-	F (114.2)	E (126.0)	-
		Signal	-	-	-	B	-	-	C
6	Roeben St & Walnut Ave	AWSC	B	B	B	-	B	C	-
7	Street 3 & Tulare Ave	NB	-	-	A	-	-	A	-
8	Street 6 & Tulare Ave	NB	-	-	-	-	-	A	-
9	Avenue 4 & Shirk St	WB	-	-	A	-	-	B	-
10	Avenue 6 & Roeben St	EB	-	-	A	-	-	A	-

AM Peak Hour Intersection Analysis

#	Intersection	Control Type	2023	2028	2028+ Project	2028+ Project w/Mitigation	2033	2033+ Project	2033+ Project w/Mitigation
1	Shirk St & SR 198 WB Ramps	AWSC	C	F (50.6)	F (131.3)	-	F (114.6)	F (238.2)	-
		Signal	-	-	-	B	-	-	C
2	Shirk St & SR 198 EB Ramps	AWSC	B	C	C	-	E (37.0)	E (38.2)	-
		Signal	-	-	-	B	-	-	B
3	Shirk St & Tulare Ave	WB	-	B	B	-	B	A	-
4	Roeben St & Tulare Ave	WB EB	A -	B A	B A	- -	B A	B A	- -
5	Shirk St & Walnut Ave	AWSC	B	C	C	-	D (25.5)	D (27.9)	-
		Signal	-	-	-	B	-	-	B
6	Roeben St & Walnut Ave	AWSC	B	B	B	-	B	C	-
7	Street 3 & Tulare Ave	NB	-	-	A	-	-	A	-
8	Street 6 & Tulare Ave	NB	-	-	-	-	-	A	-
9	Avenue 4 & Shirk St	WB	-	-	A	-	-	B	-
10	Avenue 6 & Roeben St	EB	-	-	A	-	-	A	-

Mitigation

Based on the results of the Level of Service (LOS) analysis and the eight-hour vehicular volume warrants, and the City of Visalia thresholds for mitigation, it is recommended that signals be constructed at three intersections in order to operate at an acceptable level of service by the year 2033.

#	Intersection	Improvements Recommended by 2028	Improvements Recommended by 2033	Percent Share
1	Shirk St & SR 198 WB Ramps	Signal	-	5.11%
2	Shirk St & SR 198 EB Ramps	Signal	-	9.69%
5	Shirk St & Walnut Ave	Signal	-	8.29%

INTRODUCTION

The purpose of this study is to evaluate the potential traffic impacts of a proposed single-family development located east of Shirk Street and south of Tulare Avenue in Visalia, CA. A vicinity map, location map, and a site plan are presented in Figures 1 through 3, respectively.

The proposed project includes 225 single-family dwelling units.

A. Land Use, Site and Study Area Boundaries

The existing zoning is Agriculture and the general plan is Low Density Residential.

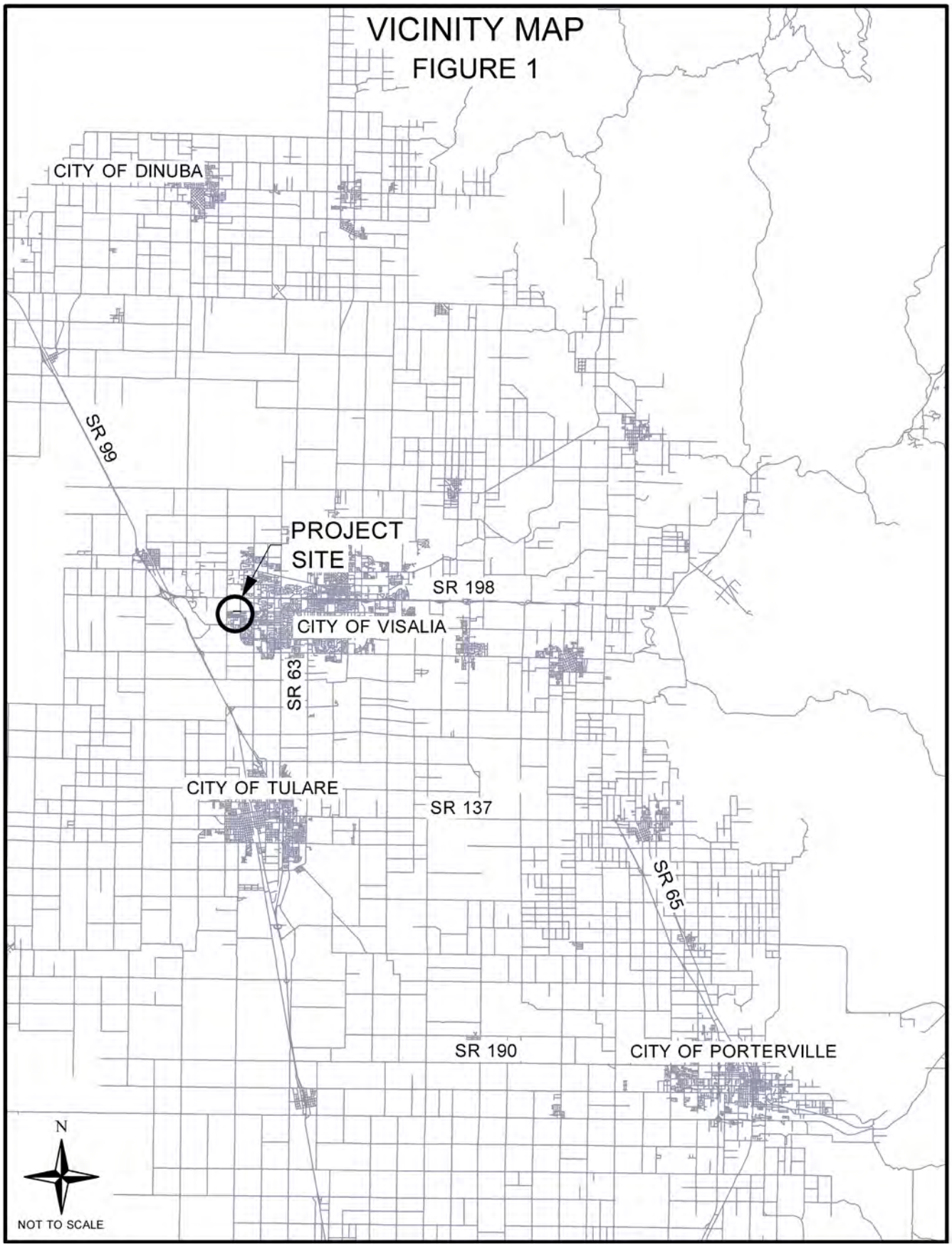
Based on the number of peak hour trips calculated (between 200-499 trips in the peak hour for residential projects), the study falls into Category II traffic impact analysis. Category II requires all signalized and major intersections be studied within a one-half mile radius of the project. The study area includes a total of six intersections (all unsignalized). The scope of the study was developed in conjunction with, and approved by the City of Visalia on October 20, 2023.

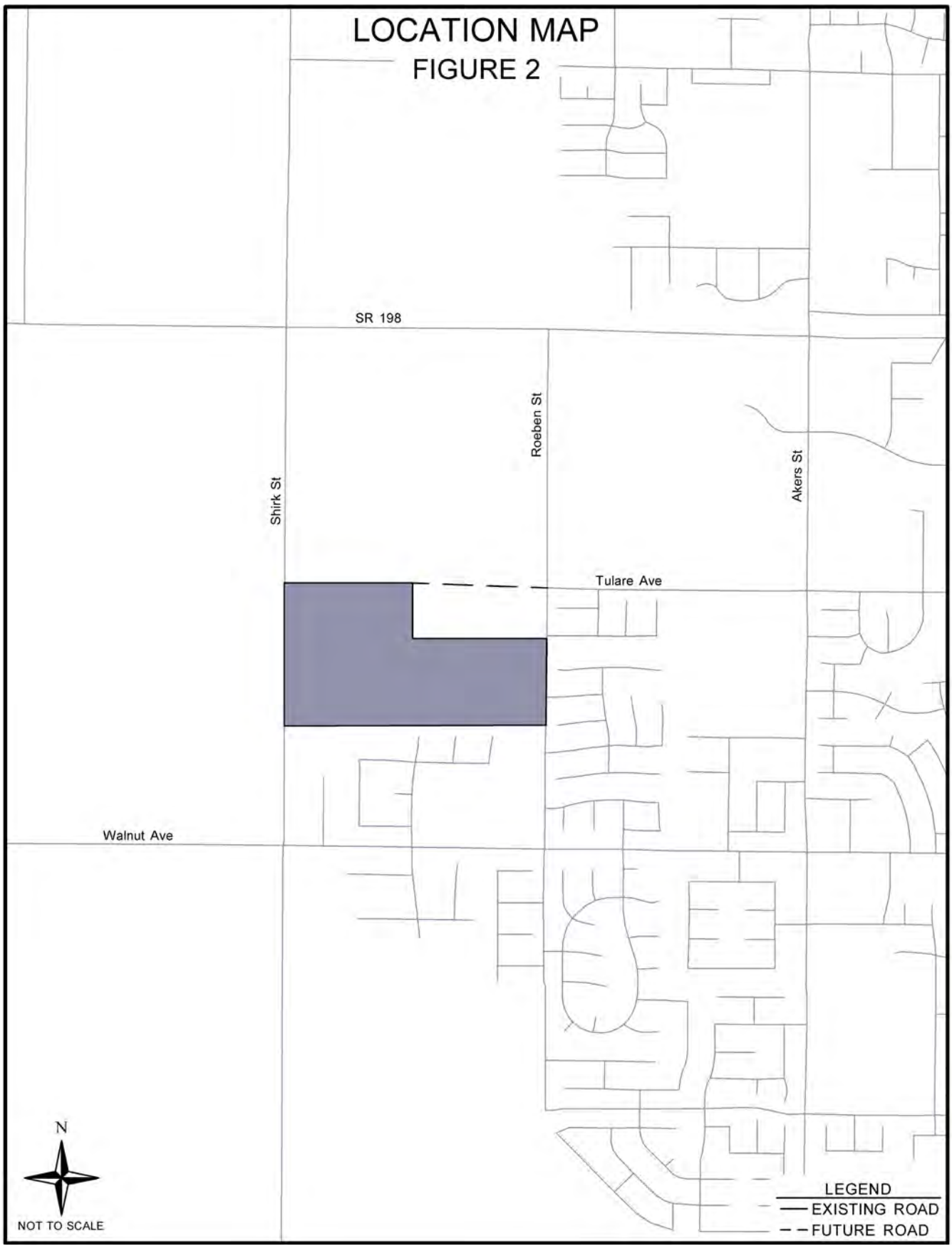
B. Existing Site Uses and Site Access

The project site is currently undeveloped and used for agriculture. Access will be provided along Shirk Road, Tulare Road, and Roeben Street.

C. Existing Uses in Vicinity of the Site

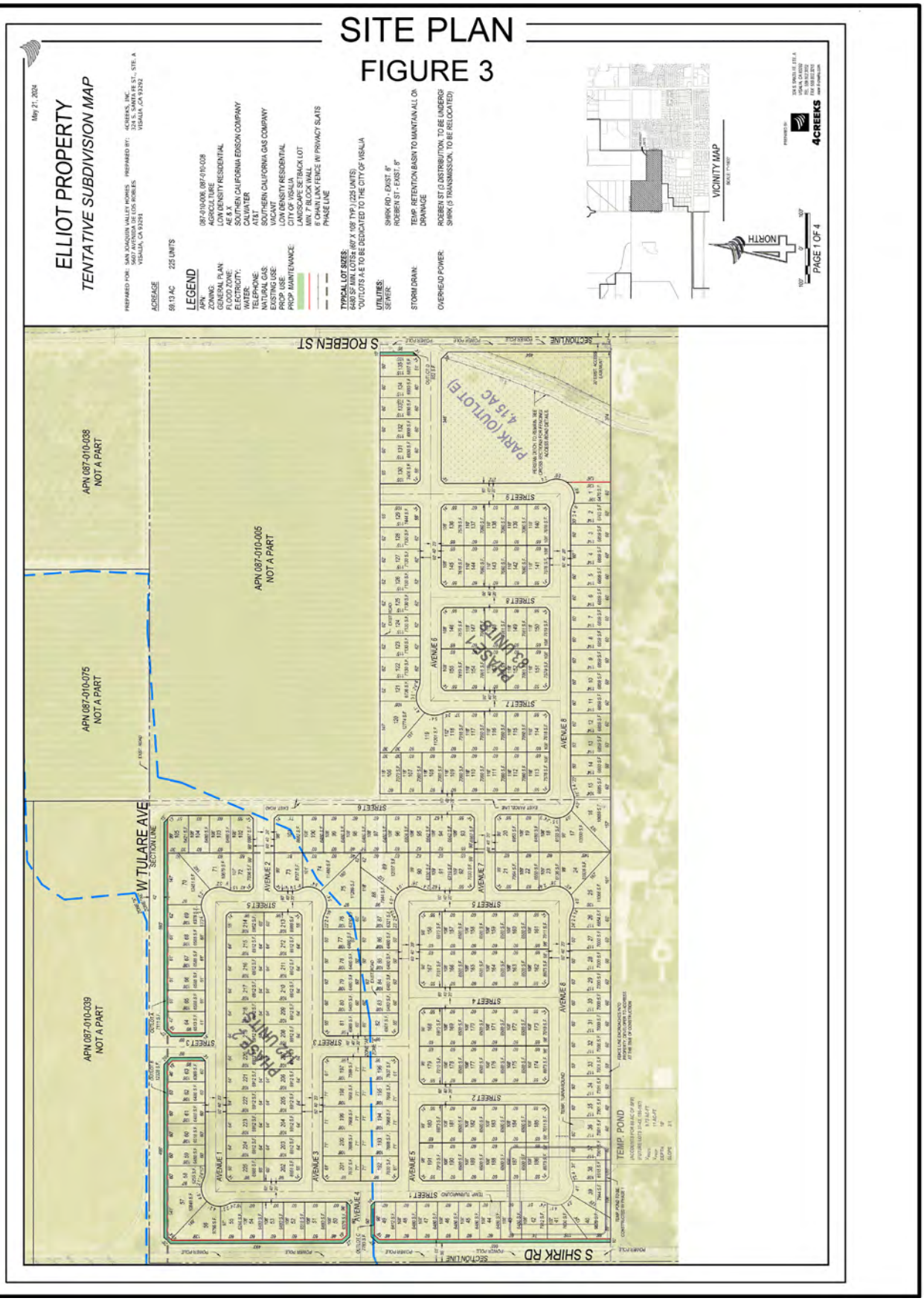
Existing land uses in the vicinity of the project site include adjacent residential to the east and south and agricultural land uses to the north and west. Central Valley Christian Schools exists further east along with commercial and medical land uses.


VICINITY MAP
FIGURE 1
CITY OF DINUBA
SR 99
PROJECT SITE
SR 198
CITY OF VISALIA
SR 63
CITY OF TULARE
SR 137
SR 65
SR 190
CITY OF PORTERVILLE
N
NOT TO SCALE


LOCATION MAP
FIGURE 2
SR 198
Shirk St
Roeben St
Akers St
Tulare Ave
Walnut Ave
N
NOT TO SCALE
LEGEND
EXISTING ROAD
FUTURE ROAD

SITE PLAN

FIGURE 3



D. Roadway Descriptions

Roeben Street is a north-south collector that exists from Whitendale Avenue to State Route 198 in the vicinity of the project. It exists as a two-lane roadway and provides access to residential land uses.

Shirk Street/Road 92 is a north-south arterial that exists from Avenue 272 north. In the vicinity of the project it exists as a two-lane roadway and provides access to residential, retail, and agricultural land uses.

State Route 198 is an east-west freeway that extends through Visalia. In the vicinity of the project it exists as four-lane freeway and has several interchanges in the City of Visalia, including at Shirk Street.

Tulare Avenue is an east-west collector that extends east from Roeben Street through the City of Visalia. In the vicinity of the project it exists as a two-lane roadway and provides access to residential land uses. It was assumed for the purposes of this study that Tulare would be extended, by others, in the future scenarios.

Walnut Avenue is an east-west arterial that extends throughout the City of Visalia. In the vicinity of the project it exists as two-lane roadway and provides access to residential land uses.

PROJECT TRIP GENERATION AND DESIGN HOUR VOLUMES

The trip generation and design hour volumes for the commercial development was calculated using the Institute of Transportation Engineers (ITE) Trip Generation, 11th Edition. The ADT, AM and PM peak hour of adjacent street traffic rate and equations, and peak hour directional splits for ITE Land Use Code 210 (Single-Family detached Housing) were used to estimate the project traffic. The trip generations for Phase I and full build out are shown in Tables 1a and 1b.

Table 1a
Phase I Project Trip Generation

General Information			Daily Trips		AM Peak Hour Trips			PM Peak Hour Trips		
ITE Code	Development Type	Variable	ADT RATE	ADT	Rate	In % Split/ Trips	Out % Split/ Trips	Rate	In % Split/ Trips	Out % Split/ Trips
210	Single-Family detached Housing	83 Dwelling Units	eq	850	eq	25% 16	75% 47	eq	63% 53	37% 31

Table 1b
Full Build-Out Project Trip Generation

General Information			Daily Trips		AM Peak Hour Trips			PM Peak Hour Trips		
ITE Code	Development Type	Variable	ADT RATE	ADT	Rate	In % Split/ Trips	Out % Split/ Trips	Rate	In % Split/ Trips	Out % Split/ Trips
210	Single-Family detached Housing	225 Dwelling Units	eq	2128	eq	25% 39	75% 117	eq	63% 134	37% 79

The project trip distribution was based on a review of the potential draw from population centers within the region as well as the types of land uses involved. These assumptions were used to distribute project traffic as shown in Table 2 and Figure 4 for the roadway system within the study scope.

Table 2
Project Trip Distribution

Direction	Percent
North	30
East	40
South	20
West	10

EXISTING AND FUTURE TRAFFIC

Traffic counts were conducted between the hours of 6:00 to 8:00 AM and 4:00 to 6:00 PM at the study intersections and are shown in Figure 5.

Annual growth rates ranging between 0.50% and 7.25% were applied to existing traffic volumes to estimate future traffic volumes for the project phases. These growth rates were estimated based on future TCAG traffic model data.

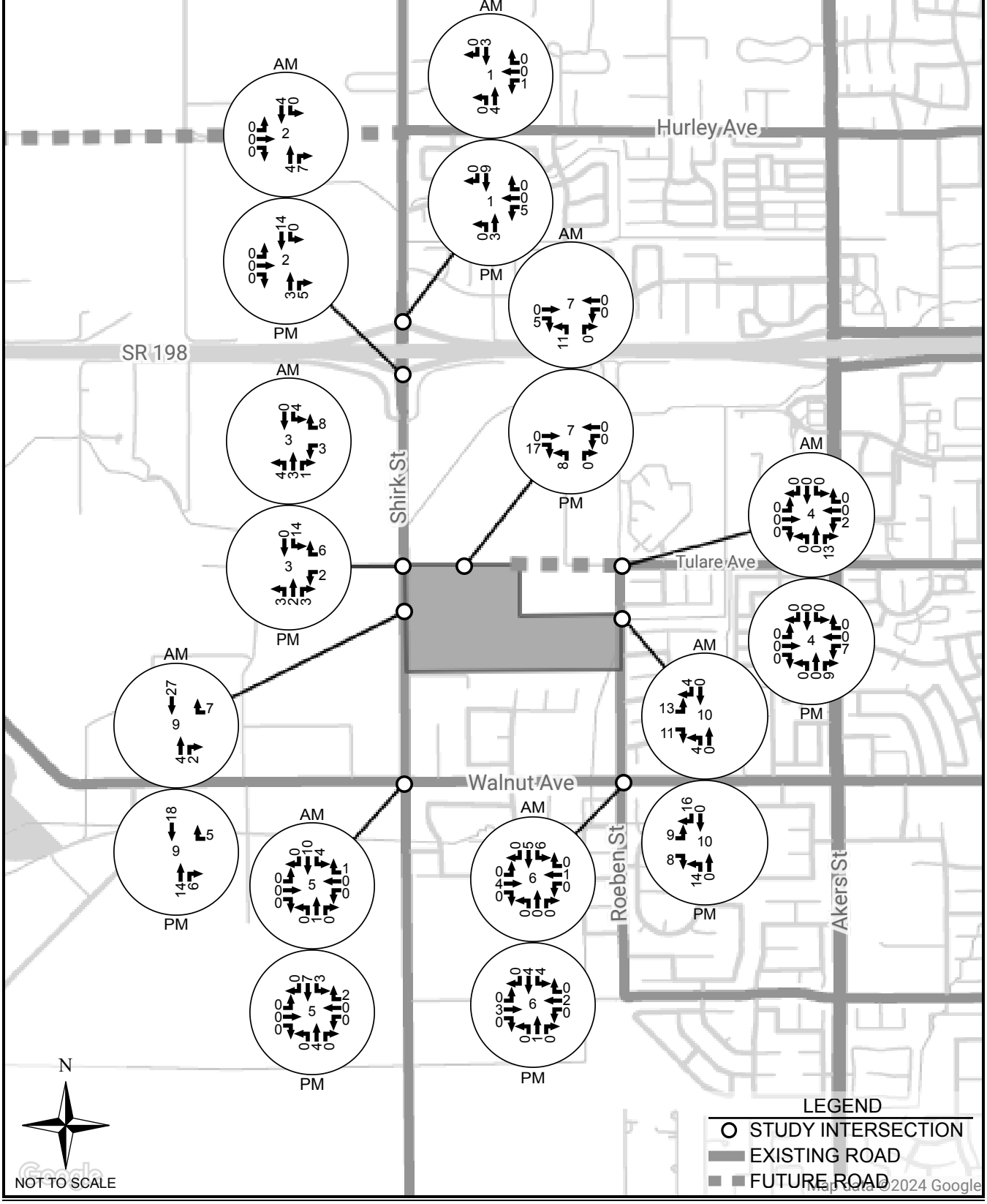
In accordance with Category II requirements, analysis will be provided for the following scenarios:

- Existing
- 2028 Cumulative (Opening Year)
- 2028 Cumulative + Project
- 2028 Cumulative + Project with Mitigation (if applicable)
- 2033 Cumulative
- 2033 Cumulative + Project
- 2033 Cumulative + Project with Mitigation (if applicable)

Project, existing and future peak hour volumes are shown in Figures 4 through 11.

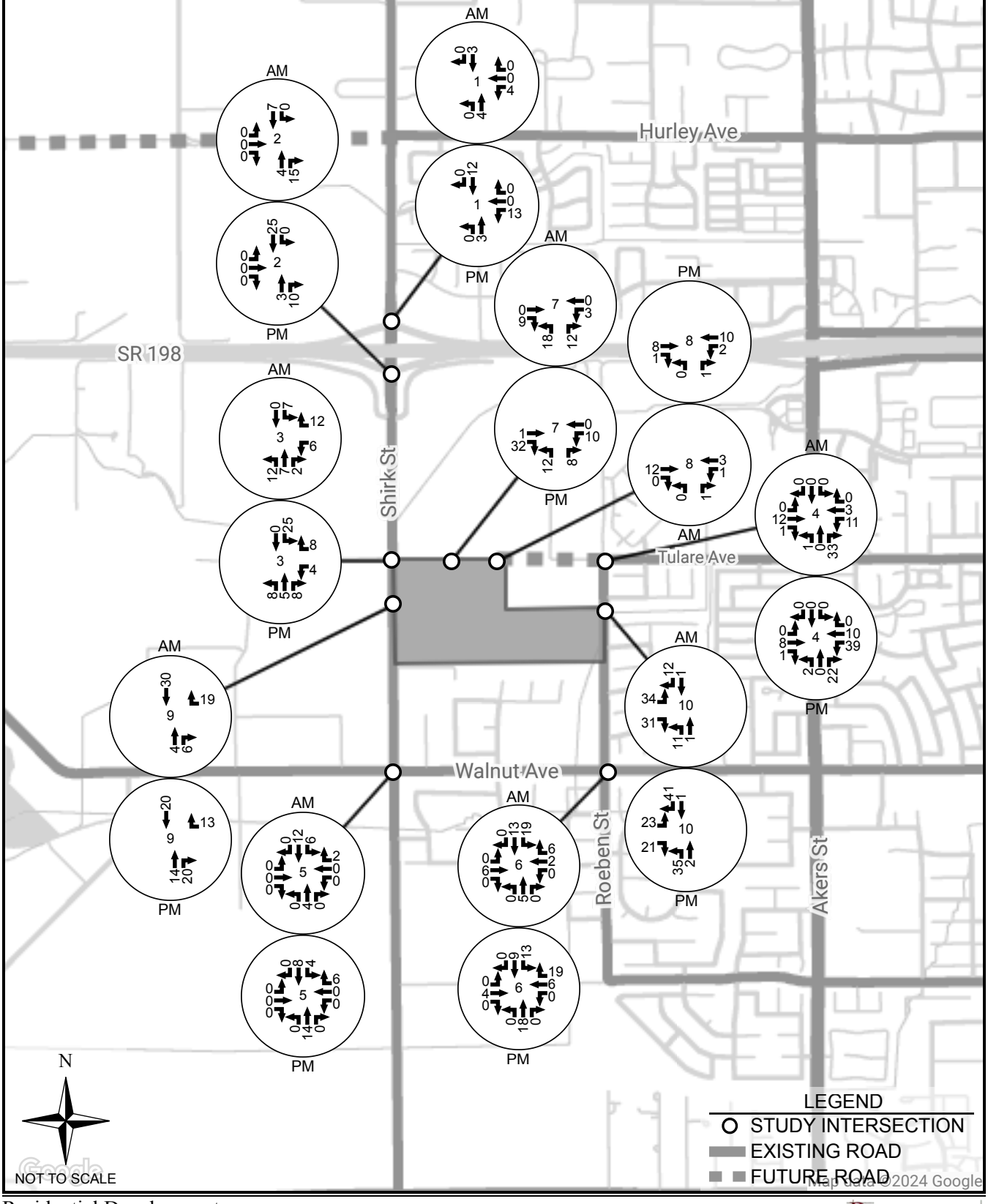
PROJECT (EXISTING) PEAK HOUR TRAFFIC

FIGURE 4

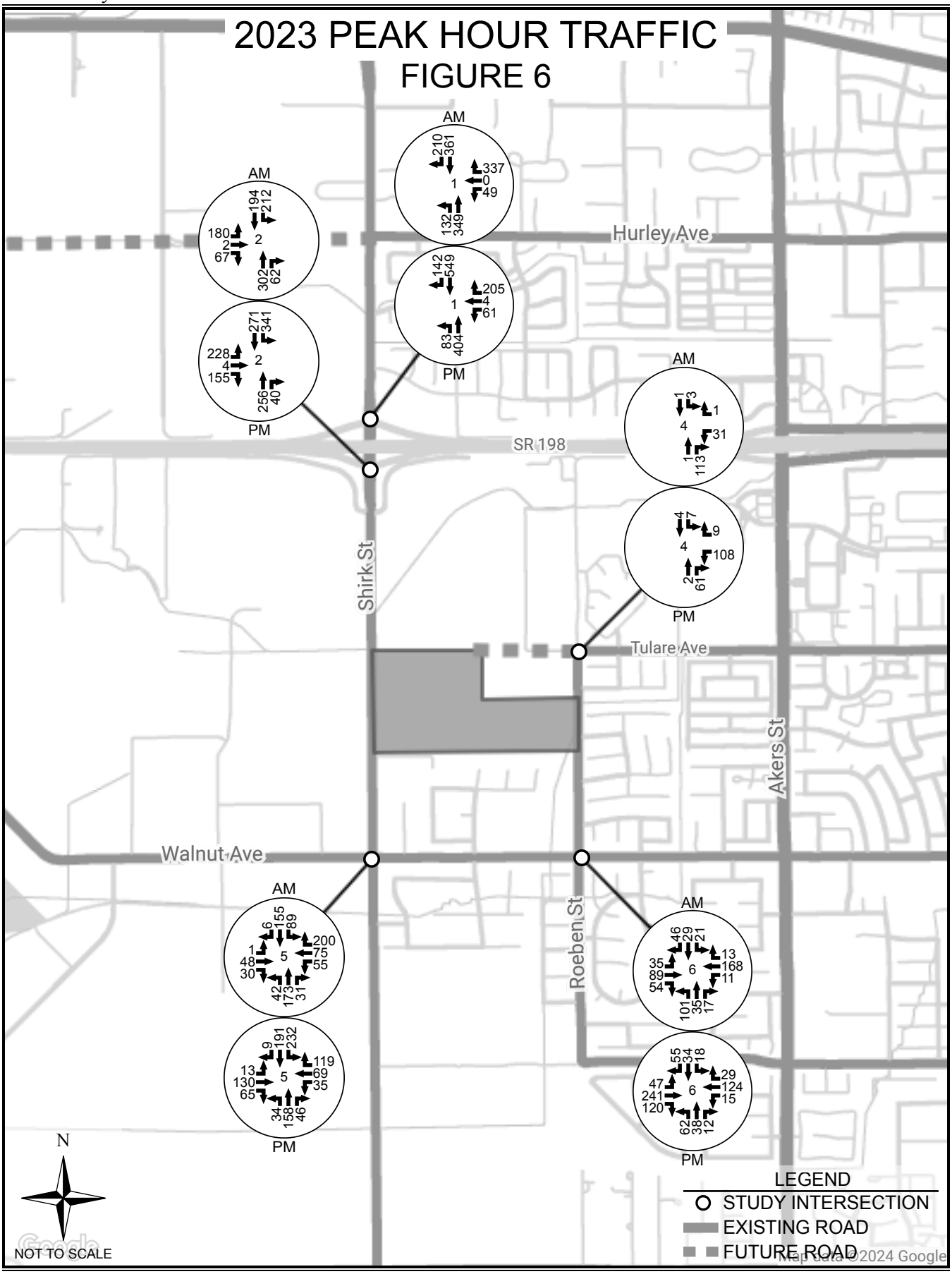


PROJECT (FUTURE) PEAK HOUR TRAFFIC

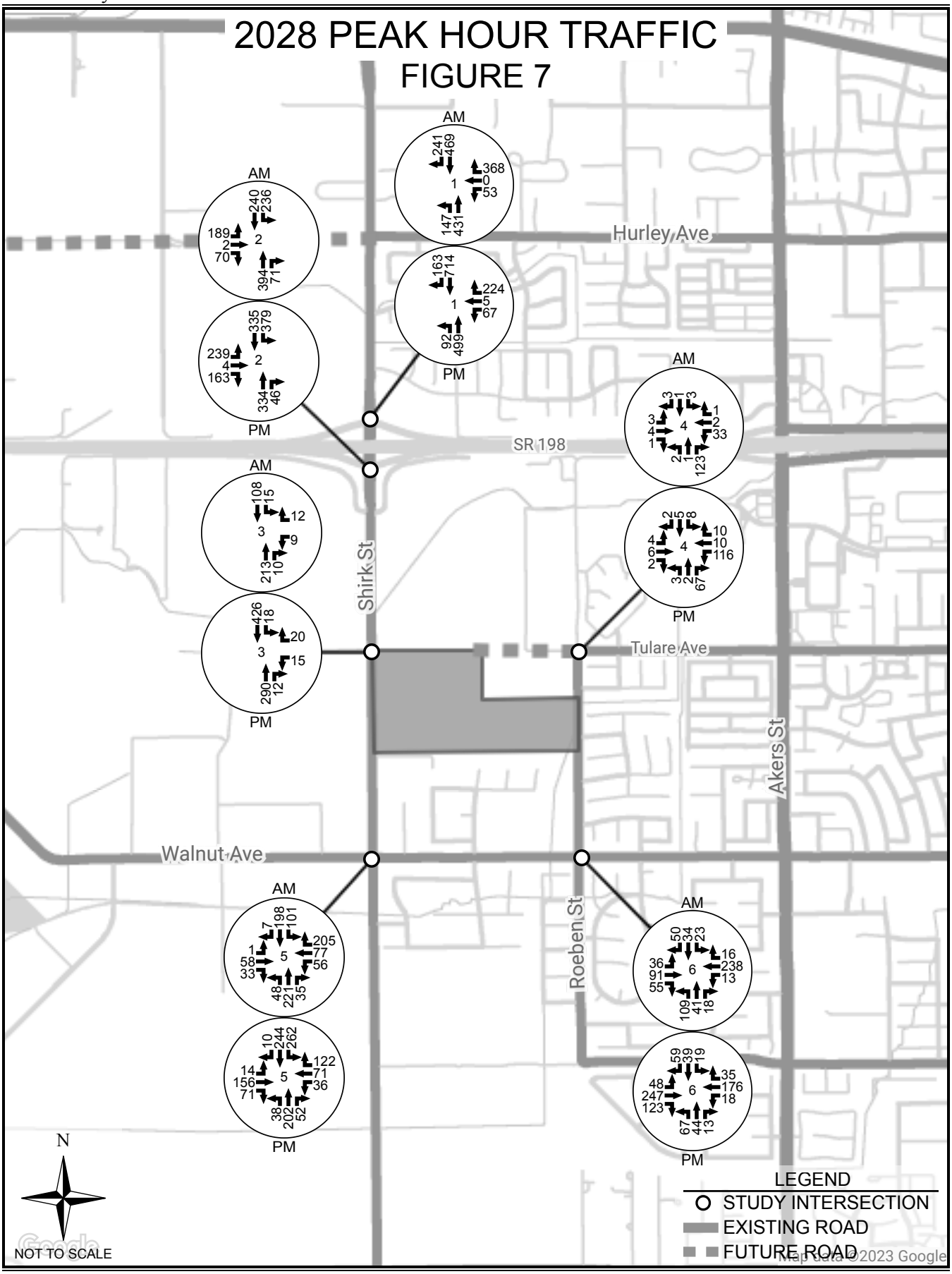
FIGURE 5



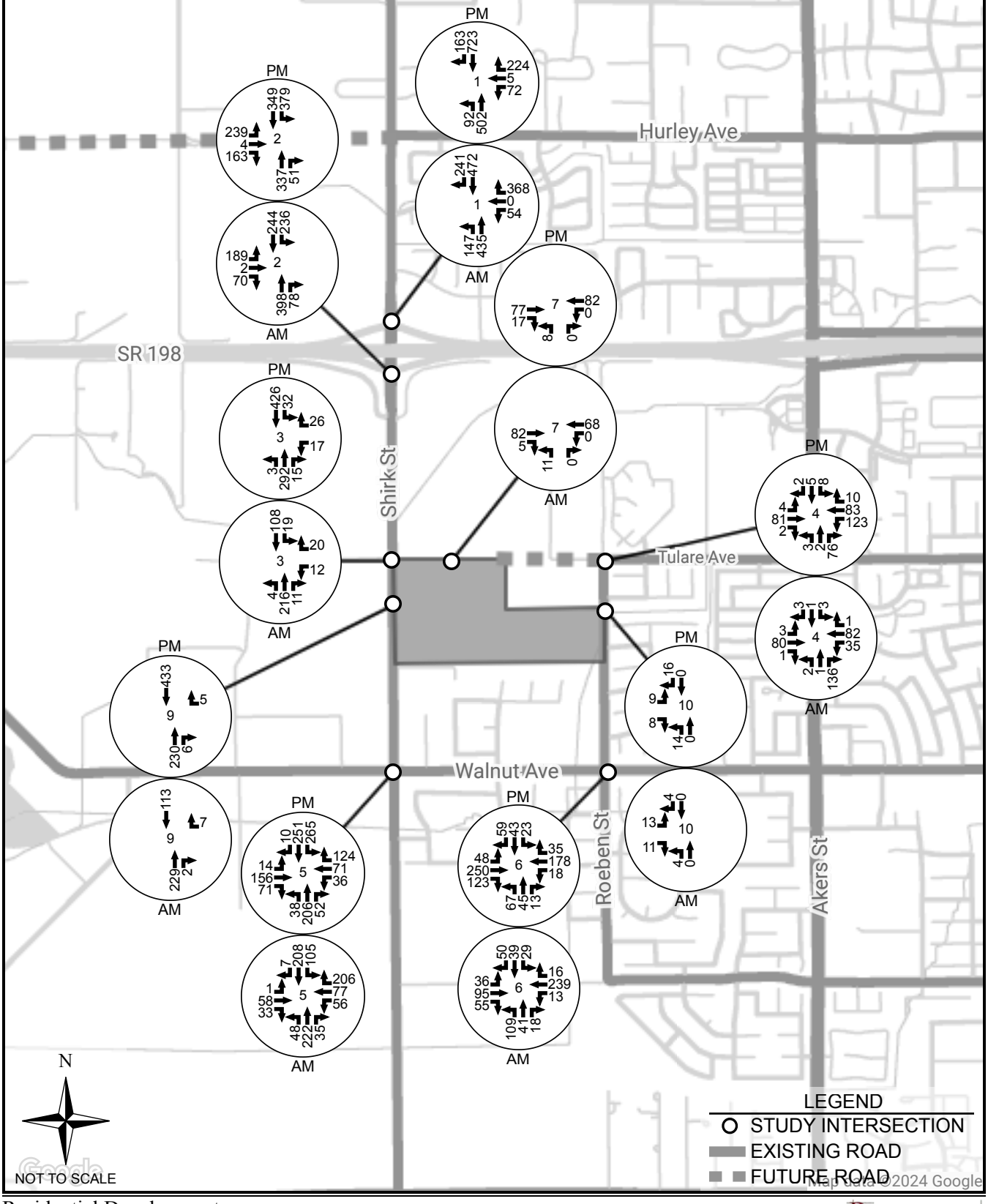
2023 PEAK HOUR TRAFFIC
FIGURE 6



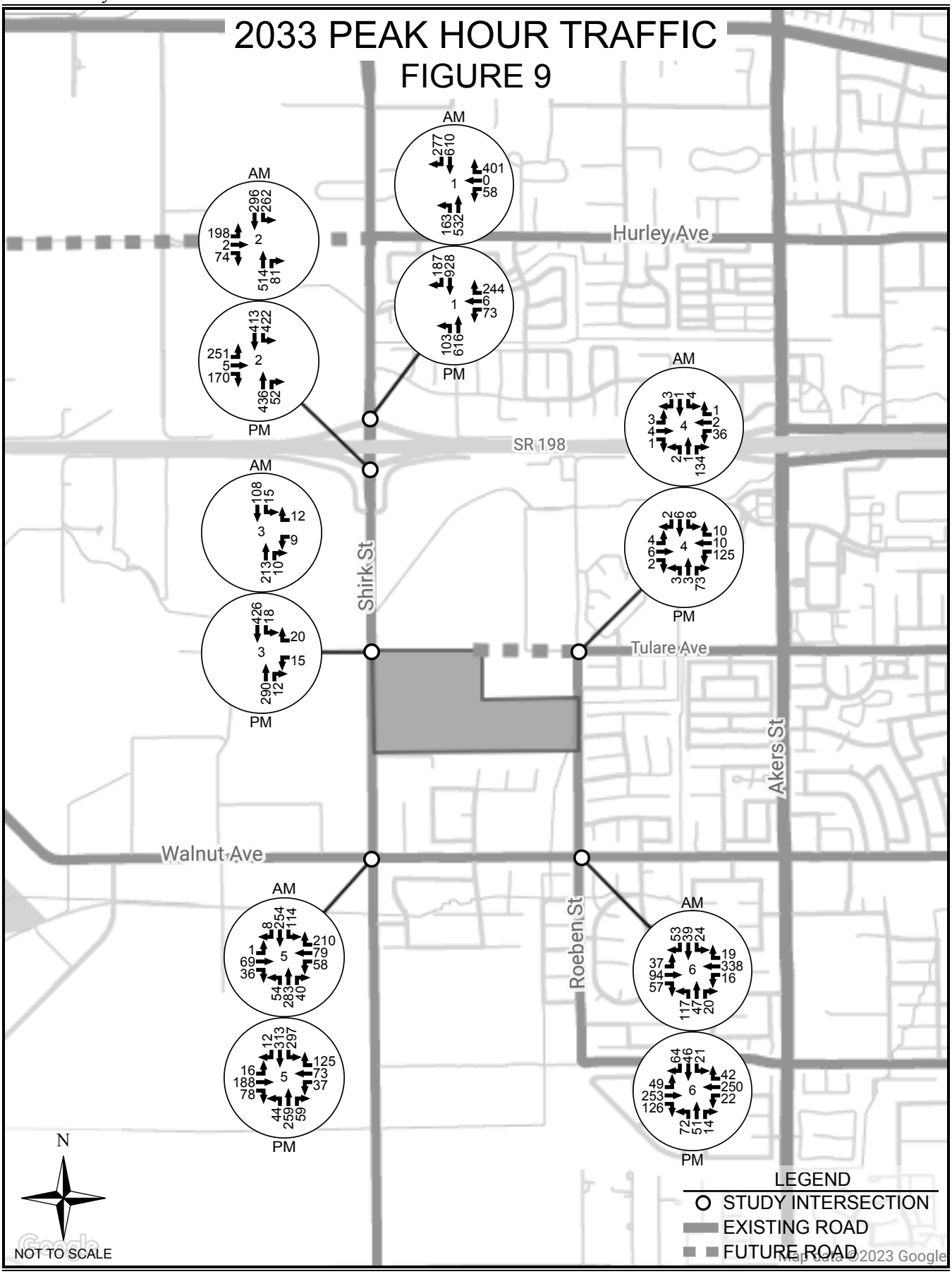
2028 PEAK HOUR TRAFFIC
FIGURE 7



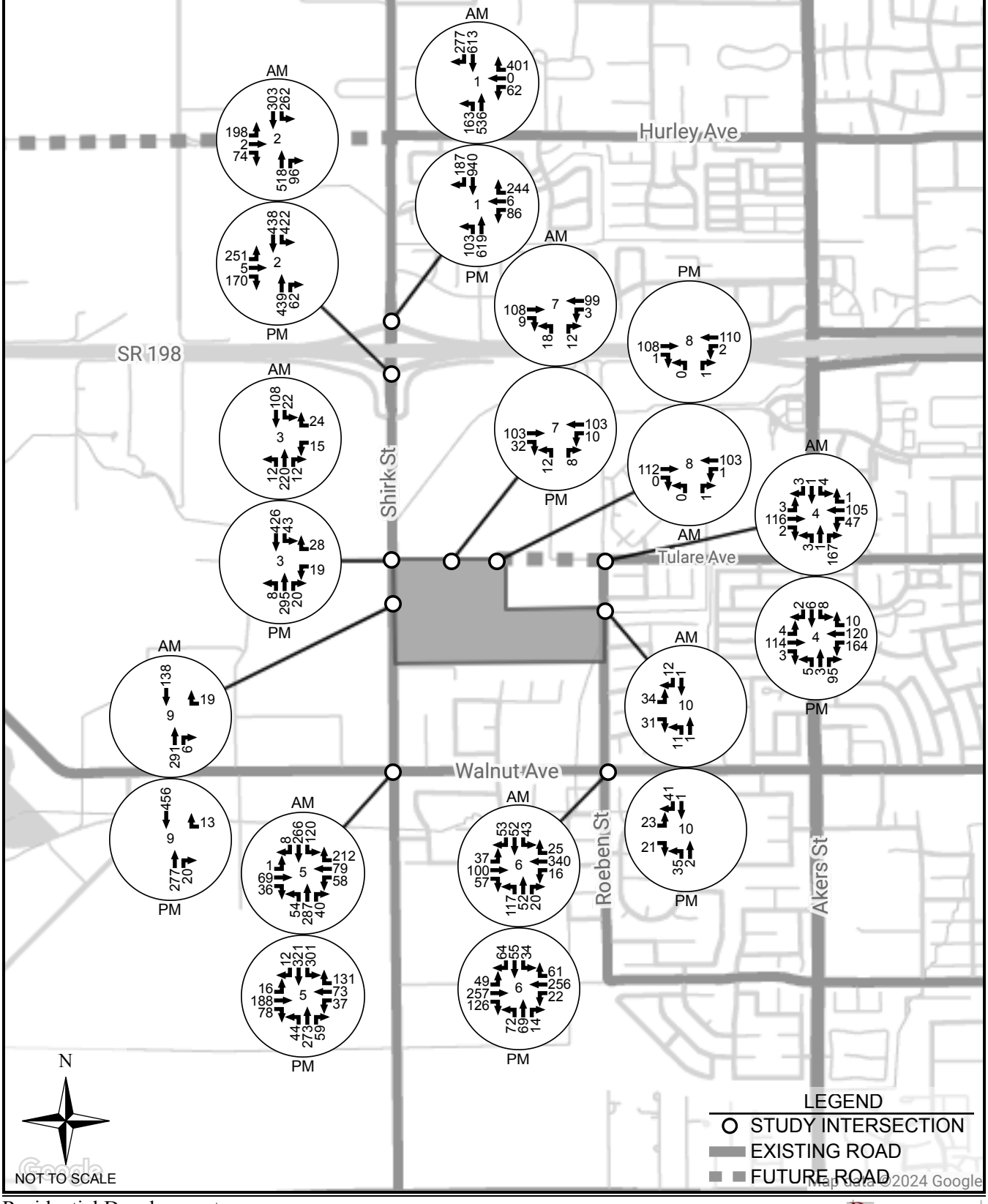
2028+PROJECT PEAK HOUR TRAFFIC
FIGURE 8



2033 PEAK HOUR TRAFFIC
FIGURE 9



2033+PROJECT (FUTURE) PEAK HOUR TRAFFIC
FIGURE 10



INTERSECTION ANALYSIS

A capacity analysis of the study intersections was conducted using Synchro software from Trafficware. Level of service for the study intersections is presented in Tables 3a and 3b. The level of service goal for roadway facilities in Visalia is LOS D.

Criteria for intersection level of service (LOS) are shown in the tables below.

LEVEL OF SERVICE CRITERIA
UNSIGNALIZED INTERSECTION

Average Control Delay (sec/veh)	Level of Service	Expected Delay to Minor Street Traffic
≤ 10	A	Little or no delay
> 10 and ≤ 15	B	Short traffic delays
> 15 and ≤ 25	C	Average traffic delays
> 25 and ≤ 35	D	Long traffic delays
> 35 and ≤ 50	E	Very long traffic delays
> 50	F	Extreme delays

LEVEL OF SERVICE CRITERIA
SIGNALIZED INTERSECTIONS

Volume/Capacity	Control Delay (sec/veh)	Level of Service
< 0.60	≤ 10	A
0.61 - 0.70	> 10 and ≤ 20	B
0.71 - 0.80	> 20 and ≤ 35	C
0.81 - 0.90	> 35 and ≤ 55	D
0.91 - 1.00	> 55 and ≤ 80	E
> 1.0	> 80	F

Table 3a
PM Intersection Level of Service

#	Intersection	Control Type	2023	2028	2028+ Project	2028+ Project w/Mitigation	2033	2033+ Project	2033+ Project w/Mitigation
1	Shirk St & SR 198 WB Ramps	AWSC	E (43.0)	F (118.7)	F (204.8)	-	F (238.1)	F (>300)	-
		Signal	-	-	-	B	-	-	B
2	Shirk St & SR 198 EB Ramps	AWSC	C	D (27.2)	D (28.1)	-	F (52.2)	F (56.2)	-
		Signal	-	-	-	B	-	-	B
3	Shirk St & Tulare Ave	WB	-	B	B	-	B	B	-
4	Roeben St & Tulare Ave	WB EB	A -	B A	B A	- -	B B	B B	- -
5	Shirk St & Walnut Ave	AWSC	C	E (44.7)	E (49.0)	-	F (114.2)	E (126.0)	-
		Signal	-	-	-	B	-	-	C
6	Roeben St & Walnut Ave	AWSC	B	B	B	-	B	C	-
7	Street 3 & Tulare Ave	NB	-	-	A	-	-	A	-
8	Street 6 & Tulare Ave	NB	-	-	-	-	-	A	-
9	Avenue 4 & Shirk St	WB	-	-	A	-	-	B	-
10	Avenue 6 & Roeben St	EB	-	-	A	-	-	A	-

Table 3b
AM Intersection Level of Service

#	Intersection	Control Type	2023	2028	2028+ Project	2028+ Project w/Mitigation	2033	2033+ Project	2033+ Project w/Mitigation
1	Shirk St & SR 198 WB Ramps	AWSC	C	F (50.6)	F (131.3)	-	F (114.6)	F (238.2)	-
		Signal	-	-	-	B	-	-	C
2	Shirk St & SR 198 EB Ramps	AWSC	B	C	C	-	E (37.0)	E (38.2)	-
		Signal	-	-	-	B	-	-	B
3	Shirk St & Tulare Ave	WB	-	B	B	-	B	A	-
4	Roeben St & Tulare Ave	WB EB	A -	B A	B A	- -	B A	B A	- -
5	Shirk St & Walnut Ave	AWSC	B	C	C	-	D (25.5)	D (27.9)	-
		Signal	-	-	-	B	-	-	B
6	Roeben St & Walnut Ave	AWSC	B	B	B	-	B	C	-
7	Street 3 & Tulare Ave	NB	-	-	A	-	-	A	-
8	Street 6 & Tulare Ave	NB	-	-	-	-	-	A	-
9	Avenue 4 & Shirk St	WB	-	-	A	-	-	B	-
10	Avenue 6 & Roeben St	EB	-	-	A	-	-	A	-

TRAFFIC SIGNAL WARRANT ANALYSIS

In accordance with the City of Visalia policy, intersections were evaluated for Warrant #1 (Eight-Hour Vehicular Volume) as defined by the California Manual on Uniform Traffic Control Devices (MUTCD). Signal warrant analysis results are shown in Table 4. Traffic signals would be considered at intersections which meet the signal warrant and are not able to be mitigated by adding capacity to intersections with additional lanes. Warrant analysis was performed on arterial and collector street intersections. Count data for signal warrant analysis was obtained in May 2021 and November 2023. The count data is included in the appendix.

Table 4
8-Hour Traffic Signal Warrants

#	Intersection	2023	2023+ Project	2028	2028+ Project	2033	2033+ Project
1	SR 198 WB Off-Ramp & Shirk Rd	YES	YES	YES	YES	YES	YES
2	SR 198 EB Off-Ramp & Shirk Rd	YES	YES	YES	YES	YES	YES
3	Shirk St & Tulare Ave	-	-	NO	NO	NO	NO
4	Roeben St & Tulare Ave	NO	NO	NO	NO	NO	NO
5	Shirk St & Walnut Ave	NO	NO	YES	YES	YES	YES
6	Roeben St & Walnut Ave	NO	NO	NO	NO	NO	NO

QUEUE LENGTH ANALYSIS

Existing volumes and future volumes, both with and without project traffic were used to analyze turn movements at all intersections. Queue length analysis was conducted using the equations provided in the City of Visalia Traffic Guidelines. The results of the queue length analysis are shown in Tables 5a and 5b below. The length of the queue is shown in feet under the Queue column.

A review of the data shows that there are a small number of turn lanes which have longer queues than available storage length (shown in bold). With the addition of project traffic, some queue lengths (which exceed available storage) are increased from existing or future base traffic, but by 9 feet or less. This is less than the average car length. Therefore, project traffic queue length impacts are minor and no mitigation was recommended. The intersection of Shirk Street & Walnut Avenue does not have any dedicated turn lanes; therefore, no queue analysis was performed.

Table 5a
PM Queue Length Analysis

#	Intersection	Turn Movement	Storage Length	2023		2023+Project		2028		2028+Project		2033		2033+Project	
				VOL	QUEUE	VOL	QUEUE	VOL	QUEUE	VOL	QUEUE	VOL	QUEUE	VOL	QUEUE
1	Shirk St & SR 198 WB Ramps	WBL	350	61	25	64	27	67	28	74	31	73	30	86	36
		WBR	350	205	171	205	171	224	187	224	187	244	203	244	203
		NBL	200	83	35	83	35	92	38	92	38	103	86	103	86
		SBL	150	142	59	142	59	163	68	163	68	187	**156**	187	**156**
2	Shirk St & SR 198 EB Ramps	EBR	220	155	129	155	129	163	136	163	136	170	142	170	142
		NBR	90	40	17	50	21	46	19	51	21	52	43	62	52
		SBL	400	341	284	341	284	379	316	379	316	422	352	422	352
3	Shirk St & Tulare Ave	WBL	100	-	-	-	-	15	13	17	14	15	13	18	15
		WBR	50	-	-	-	-	20	17	26	22	20	17	28	23
		NBR	50	-	-	-	-	12	10	15	13	12	10	16	13
		SBL	100	-	-	-	-	18	15	32	27	18	15	34	28
4	Roeben St & Tulare Ave	EBL	100	-	-	-	-	4	2	4	2	4	3	8	7
		EBR	50	-	-	-	-	2	2	2	2	2	2	5	4
		WBL	100	108	45	124	52	116	48	123	51	125	**104**	136	**113**
		WBR	50	9	8	9	8	10	8	10	8	10	8	10	8
		NBL	100	-	-	-	-	3	1	3	1	3	3	8	7
		NBR	100	61	51	71	59	67	56	76	63	73	61	79	66
		SBL	100	7	3	7	3	8	3	3	1	8	7	8	7
		SBR	50	-	-	-	-	2	2	3	3	2	2	9	8
6	Roeben St & Walnut Ave	EBR[1]	-	120	50	120	50	123	103	123	103	126	105	126	105
		WBR[1]	-	29	12	47	20	35	29	35	29	42	35	53	44
		NBR[1]	-	12	5	12	5	13	11	13	11	14	12	14	12

[1]There are no physical limitations to the storage length

Table 5b
AM Queue Length Analysis

#	Intersection	Turn Movement	Storage Length	2023		2023+Project		2028		2028+Project		2033		2033+Project	
				VOL	QUEUE	VOL	QUEUE	VOL	QUEUE	VOL	QUEUE	VOL	QUEUE	VOL	QUEUE
1	Shirk St & SR 198 WB Ramps	WBL	350	49	20	53	22	53	22	54	23	58	24	62	26
		WBR	350	337	281	337	281	368	307	368	307	401	334	401	334
		NBL	200	132	55	132	55	147	61	147	61	163	136	163	136
		SBL	150	210	88	210	88	241	100	241	100	277	**231**	277	**231**
2	Shirk St & SR 198 EB Ramps	EBR	220	67	56	67	56	70	58	70	58	74	62	74	62
		NBR	90	62	26	77	32	71	30	76	32	81	68	96	80
		SBL	400	212	177	212	177	236	197	236	197	262	218	262	218
3	Shirk St & Tulare Ave	WBL	100	-	-	-	-	9	8	12	10	9	8	13	11
		WBR	50	-	-	-	-	12	10	16	13	12	10	23	19
		NBR	50	-	-	-	-	10	8	11	9	10	8	11	9
		SBL	100	-	-	-	-	15	13	19	16	15	13	20	17
4	Tulare Ave & Roeben St	EBL	100	-	-	-	-	3	1	3	1	3	3	9	8
		EBR	50	-	-	-	-	1	1	1	1	1	1	5	4
		WBL	100	31	13	35	15	33	14	35	15	36	30	40	33
		WBR	50	1	1	1	1	1	1	1	1	1	1	1	1
		NBL	100	-	-	-	-	2	1	2	1	2	2	3	3
		NBR	120	113	94	121	101	123	103	136	113	134	112	142	118
		SBL	100	3	1	3	1	3	1	3	1	4	3	4	3
		SBR	50	-	-	-	-	3	3	3	3	3	3	5	4
6	Roeben St & Walnut Ave	EBR[1]	-	54	23	54	23	55	46	55	46	57	48	57	48
		WBR[1]	-	13	5	17	7	16	13	16	13	19	16	23	19
		NBR[1]	-	17	7	17	7	18	15	18	15	20	17	20	17

[1]There are no physical limitations to the storage length

DECELERATION LANE ANALYSIS

A review of the project intersection number 7, 8, 9, and 10 was conducted to determine if they meet the deceleration lane criteria in accordance with the traffic study guidelines. The following table shows the intersection and whether or not the intersection meets any of the four deceleration lane criteria:

Intersection	5,000 ADT	35mph Posted Speed Limit	1,000 ADT Using Driveways	40 Right Turns in Peak Hour
7	No	-[1]	No	No
8	No	-[1]	No	No
9	Yes	-[1]	No	No
10	No	-[1]	No	No

[1]No posted speed limit. For Shirk Street, it is currently considered 55 mph. However, it is not known what the posted speed limit will be when development builds out.

Intersection 9 is the only intersection that meets one of the criteria. Due to the low number of right turns into the development at intersection 9 (20 in the PM peak hour), it is recommended that a striped right

turn deceleration lane be installed. The following table shows the right turn length recommended based on storage length (queue) length and deceleration length.

Intersection	Int #	Movement	Right Turn Volume (veh/hr)	Speed Limit (mph)	Storage length (ft)	Decel Lane Length (ft)[1]	Recommended length (ft)
Avenue 4 & Shirk St	9	NBR	20	45[2]	17	275	300

[1]From Table 405.2B in the Caltrans Highway Design Manual

[2]It is assumed that the speed limit will be 45mph once Shirk is built to ultimate width based on other portions of Shirk St

ACCIDENT INVESTIGATION

City Intersections

Accident data was investigated from the SWITRS database for the previous two years. Upon review of the data provided, it was determined that there was a total of one accident located within City of Visalia jurisdiction intersections, which was located at Shirk Street & Walnut Avenue (driver DUI).

Caltrans Safety Crash Analysis

Traffic accident data was received from Caltrans on April 17, 2024 for State Route 198 Westbound and Eastbound ramps at Shirk Road. Between the years 2020 and 2023, there were a total of two accidents, both on the SR 198 eastbound oof ramp to Shirk Road. Both accidents were related to speeding, with one resulting in a rear-end collision and one resulting in a collision with a dike or curb. There were no other accidents reported. The total collisions for each location shown in the TASAS report provided show the actual rates are below the average rates for all facilities.

The relatively low volume of traffic which will be added to the ramps by the project will not be expected to increase accidents rates on the ramps as there are no specific patterns of accidents that the project would increase. Additionally, as outlined in the mitigation shown in Table 6, the addition of signals at the ramps will provide an additional safety measure with the signal control.

The *Traffic Accident Surveillance and Analysis System (TASAS) Collision Data Summary*, provided by Caltrans, is included in the appendix.

MITIGATION

Based on the results of the Level of Service (LOS) analysis and eight-hour vehicular volume warrant, and the City of Visalia thresholds for mitigation, it is recommended that signals be constructed at the three intersections identified in Table 6 in order to operate at an acceptable level of service by the year 2033. The project's fair share percentage for the improvements identified is included in Table 6.

Table 6
Future Intersection Improvements

#	Intersection	Improvements Recommended by 2028	Improvements Recommended by 2033	Fair Share Percentage
1	Shirk St & SR 198 WB Ramps	Signal	-	9.71%
2	Shirk St & SR 198 EB Ramps	Signal	-	18.00%
5	Shirk St & Walnut Ave	Signal	-	13.66%

VEHICLE MILES TRAVELED (VMT) ANALYSIS

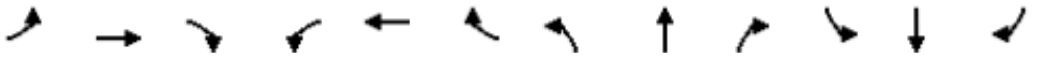
An evaluation of project vehicle miles traveled (VMT) was conducted based on VMT analysis guidelines adopted by the City of Visalia. The guidelines provide "screening thresholds" for identifying whether a land use project should be expected to result in a less than significant transportation impact under CEQA. Projects meeting one or more of these criteria would not be required to undergo a detailed VMT analysis. One of the screening criteria is "Project Location Screening". Development projects that are located in a low VMT zone would be expected to generate similar low vehicle miles travelled. Using the City of Visalia online VMT screening application, the project was determined to be located in TAZ 1358. Utilizing the "VMT Per Capita" metric due to residential project, the average VMT was determined to be 8.61 miles per capita. The average VMT per capita for Tulare County is 11.9. Therefore, the project is determined to be in a low VMT zone and the project would be expected to result in a less than significant transportation impact under CEQA.

A printout of the application findings and mapping is included in the appendix.

REFERENCES

1. Annual Traffic Census, TCAG
2. Highway Capacity Manual, Special Report 209, Transportation Research Board
3. California Manual on Uniform Traffic Control Devices for Streets and Highways, 2014 Edition, Federal Highway Administration (FHA)
4. Trip Generation, 11th Edition, Institute of Transportation Engineers (ITE)
5. Visalia General Plan, October 2014

APPENDIX



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	49	0	337	132	349	0	0	361	210
Future Volume (vph)	0	0	0	49	0	337	132	349	0	0	361	210
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		0	0		350	200		0	80		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850						0.850
Flt Protected					0.950		0.950					
Satd. Flow (prot)	0	0	0	0	1770	1458	1630	1863	0	0	1863	1458
Flt Permitted					0.950		0.950					
Satd. Flow (perm)	0	0	0	0	1770	1458	1630	1863	0	0	1863	1458
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1153			2492			645			504	
Travel Time (s)		14.3			30.9			8.0			6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	53	0	366	143	379	0	0	392	228
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	53	366	143	379	0	0	392	228
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

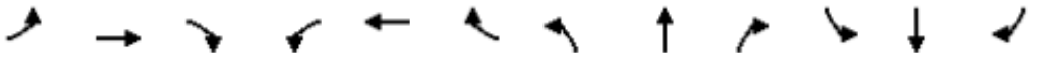
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	23
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	49	0	337	132	349	0	0	361	210
Future Vol, veh/h	0	0	0	49	0	337	132	349	0	0	361	210
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	53	0	366	143	379	0	0	392	228
Number of Lanes	0	0	0	0	1	1	1	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay, s/veh	22	23.8	22.9
HCM LOS	C	C	C

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	132	349	49	337	361	210
LT Vol	132	0	49	0	0	0
Through Vol	0	349	0	0	361	0
RT Vol	0	0	0	337	0	210
Lane Flow Rate	143	379	53	366	392	228
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	0.302	0.743	0.119	0.692	0.76	0.397
Departure Headway (Hd)	7.565	7.052	8.026	6.799	6.974	6.256
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	476	512	447	531	518	575
Service Time	5.303	4.79	5.76	4.532	4.712	3.993
HCM Lane V/C Ratio	0.3	0.74	0.119	0.689	0.757	0.397
HCM Control Delay, s/veh	13.6	27.6	11.8	23.5	28.6	13.1
HCM Lane LOS	B	D	B	C	D	B
HCM 95th-tile Q	1.3	6.3	0.4	5.3	6.6	1.9



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	2	67	0	0	0	0	302	62	212	194	0
Future Volume (vph)	180	2	67	0	0	0	0	302	62	212	194	0
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		220	0		0	0		90	150		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected		0.953								0.950		
Satd. Flow (prot)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1076			2120			4993			645	
Travel Time (s)		13.3			26.3			61.9			8.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	2	73	0	0	0	0	328	67	230	211	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	198	73	0	0	0	0	328	67	230	211	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

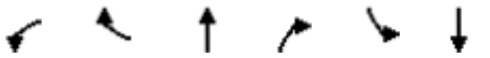
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	13.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	180	2	67	0	0	0	0	302	62	212	194	0
Future Vol, veh/h	180	2	67	0	0	0	0	302	62	212	194	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	196	2	73	0	0	0	0	328	67	230	211	0
Number of Lanes	0	1	1	0	0	0	0	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay, s/veh	13.3	15	13
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	0%	99%	0%	100%	0%
Vol Thru, %	100%	0%	1%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	302	62	182	67	212	194
LT Vol	0	0	180	0	212	0
Through Vol	302	0	2	0	0	194
RT Vol	0	62	0	67	0	0
Lane Flow Rate	328	67	198	73	230	211
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	0.556	0.101	0.396	0.121	0.417	0.352
Departure Headway (Hd)	6.098	5.387	7.201	5.989	6.518	6.01
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	591	664	500	598	553	597
Service Time	3.844	3.133	4.948	3.735	4.263	3.755
HCM Lane V/C Ratio	0.555	0.101	0.396	0.122	0.416	0.353
HCM Control Delay, s/veh	16.3	8.7	14.6	9.6	13.9	12
HCM Lane LOS	C	A	B	A	B	B
HCM 95th-tile Q	3.4	0.3	1.9	0.4	2	1.6



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	31	1	1	113	3	1
Future Volume (vph)	31	1	1	113	3	1
Ideal Flow (vphpl)	1750	1750	1900	1750	1750	1900
Storage Length (ft)	100	50		50	100	
Storage Lanes	1	0		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1630	1458	1863	1458	1630	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1630	1458	1863	1458	1630	1863
Link Speed (mph)	55		55			55
Link Distance (ft)	1533		2637			1348
Travel Time (s)	19.0		32.7			16.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	1	1	123	3	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	1	1	123	3	1
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.00	1.11	1.11	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	17.6%	ICU Level of Service	A
Analysis Period (min)	15		

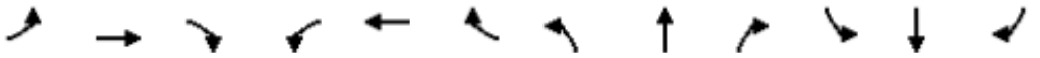
Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	1	1	113	3	1
Future Vol, veh/h	31	1	1	113	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	50	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	1	1	123	3	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	8	1	0	0	124	0
Stage 1	1	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1013	1084	-	-	1463	-
Stage 1	1022	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1011	1084	-	-	1463	-
Mov Cap-2 Maneuver	1011	-	-	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	1014	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.7	0	5.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	1011	1084	1463	-
HCM Lane V/C Ratio	-	-	0.033	0.001	0.002	-
HCM Control Delay (s/veh)	-	-	8.7	8.3	7.5	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	48	30	55	75	200	42	173	31	89	155	6
Future Volume (vph)	1	48	30	55	75	200	42	173	31	89	155	6
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.948			0.918			0.983			0.997	
Flt Protected		0.999			0.992			0.991			0.982	
Satd. Flow (prot)	0	1764	0	0	1696	0	0	1815	0	0	1824	0
Flt Permitted		0.999			0.992			0.991			0.982	
Satd. Flow (perm)	0	1764	0	0	1696	0	0	1815	0	0	1824	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1796			2695			2949			4993	
Travel Time (s)		22.3			33.4			36.6			61.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	52	33	60	82	217	46	188	34	97	168	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	86	0	0	359	0	0	268	0	0	272	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

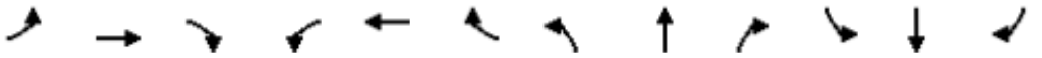
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.8%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	48	30	55	75	200	42	173	31	89	155	6
Future Vol, veh/h	1	48	30	55	75	200	42	173	31	89	155	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	52	33	60	82	217	46	188	34	97	168	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	9.9	14.1	12.6	13
HCM LOS	A	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	1%	17%	36%
Vol Thru, %	70%	61%	23%	62%
Vol Right, %	13%	38%	61%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	246	79	330	250
LT Vol	42	1	55	89
Through Vol	173	48	75	155
RT Vol	31	30	200	6
Lane Flow Rate	267	86	359	272
Geometry Grp	1	1	1	1
Degree of Util (X)	0.416	0.14	0.525	0.429
Departure Headway (Hd)	5.597	5.878	5.267	5.681
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	639	605	682	630
Service Time	3.657	3.958	3.324	3.741
HCM Lane V/C Ratio	0.418	0.142	0.526	0.432
HCM Control Delay, s/veh	12.6	9.9	14.1	13
HCM Lane LOS	B	A	B	B
HCM 95th-tile Q	2	0.5	3.1	2.2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	89	54	11	168	13	101	35	17	21	29	46
Future Volume (vph)	35	89	54	11	168	13	101	35	17	21	29	46
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		50	0		140	0		50	0		0
Storage Lanes	0		1	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.936	
Flt Protected		0.986			0.997			0.964			0.989	
Satd. Flow (prot)	0	1837	1458	0	1857	1458	0	1796	1458	0	1724	0
Flt Permitted		0.986			0.997			0.964			0.989	
Satd. Flow (perm)	0	1837	1458	0	1857	1458	0	1796	1458	0	1724	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2695			2169			2270			2637	
Travel Time (s)		33.4			26.9			28.1			32.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	97	59	12	183	14	110	38	18	23	32	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	135	59	0	195	14	0	148	18	0	105	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

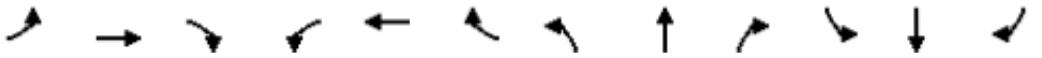
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	89	54	11	168	13	101	35	17	21	29	46
Future Vol, veh/h	35	89	54	11	168	13	101	35	17	21	29	46
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	97	59	12	183	14	110	38	18	23	32	50
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay, s/veh	9.4	10.5	10.6	9.8
HCM LOS	A	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	74%	0%	28%	0%	6%	0%	22%
Vol Thru, %	26%	0%	72%	0%	94%	0%	30%
Vol Right, %	0%	100%	0%	100%	0%	100%	48%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	136	17	124	54	179	13	96
LT Vol	101	0	35	0	11	0	21
Through Vol	35	0	89	0	168	0	29
RT Vol	0	17	0	54	0	13	46
Lane Flow Rate	148	18	135	59	195	14	104
Geometry Grp	5	5	5	5	5	5	4b
Degree of Util (X)	0.249	0.026	0.213	0.079	0.3	0.019	0.165
Departure Headway (Hd)	6.061	4.981	5.68	4.831	5.547	4.809	5.686
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	587	709	625	732	642	735	634
Service Time	3.861	2.78	3.475	2.625	3.339	2.601	3.686
HCM Lane V/C Ratio	0.252	0.025	0.216	0.081	0.304	0.019	0.164
HCM Control Delay, s/veh	10.9	7.9	10	8	10.7	7.7	9.8
HCM Lane LOS	B	A	A	A	B	A	A
HCM 95th-tile Q	1	0.1	0.8	0.3	1.3	0.1	0.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	53	0	368	147	431	0	0	469	241
Future Volume (vph)	0	0	0	53	0	368	147	431	0	0	469	241
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		0	0		350	200		0	80		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850						0.850
Flt Protected					0.950		0.950					
Satd. Flow (prot)	0	0	0	0	1770	1458	1630	1863	0	0	1863	1458
Flt Permitted					0.950		0.950					
Satd. Flow (perm)	0	0	0	0	1770	1458	1630	1863	0	0	1863	1458
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1153			2492			645			504	
Travel Time (s)		14.3			30.9			8.0			6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	58	0	400	160	468	0	0	510	262
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	58	400	160	468	0	0	510	262
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

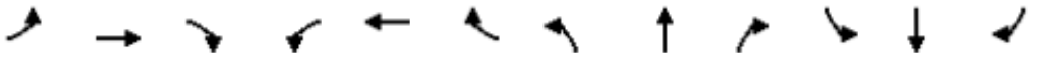
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.5%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	50.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	53	0	368	147	431	0	0	469	241
Future Vol, veh/h	0	0	0	53	0	368	147	431	0	0	469	241
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	58	0	400	160	468	0	0	510	262
Number of Lanes	0	0	0	0	1	1	1	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay, s/veh	31.6	50.3	62.2
HCM LOS	D	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	147	431	53	368	469	241
LT Vol	147	0	53	0	0	0
Through Vol	0	431	0	0	469	0
RT Vol	0	0	0	368	0	241
Lane Flow Rate	160	468	58	400	510	262
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	0.354	0.972	0.136	0.806	1.063	0.494
Departure Headway (Hd)	8.166	7.649	8.658	7.42	7.508	6.786
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	443	478	417	492	489	534
Service Time	5.866	5.349	6.358	5.12	5.208	4.486
HCM Lane V/C Ratio	0.361	0.979	0.139	0.813	1.043	0.491
HCM Control Delay, s/veh	15.3	62.2	12.7	34.3	86	15.9
HCM Lane LOS	C	F	B	D	F	C
HCM 95th-tile Q	1.6	12.3	0.5	7.6	15.8	2.7



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	189	2	70	0	0	0	0	394	71	236	240	0
Future Volume (vph)	189	2	70	0	0	0	0	394	71	236	240	0
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		220	0		0	0		90	150		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected		0.953								0.950		
Satd. Flow (prot)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1076			2120			2339			645	
Travel Time (s)		13.3			26.3			29.0			8.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	205	2	76	0	0	0	0	428	77	257	261	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	207	76	0	0	0	0	428	77	257	261	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

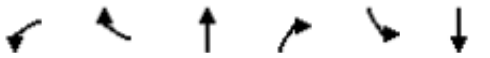
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.5%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	18.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	189	2	70	0	0	0	0	394	71	236	240	0
Future Vol, veh/h	189	2	70	0	0	0	0	394	71	236	240	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	205	2	76	0	0	0	0	428	77	257	261	0
Number of Lanes	0	1	1	0	0	0	0	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay, s/veh	14.7	23.5	15.1
HCM LOS	B	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	0%	99%	0%	100%	0%
Vol Thru, %	100%	0%	1%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	394	71	191	70	236	240
LT Vol	0	0	189	0	236	0
Through Vol	394	0	2	0	0	240
RT Vol	0	71	0	70	0	0
Lane Flow Rate	428	77	208	76	257	261
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	0.754	0.121	0.44	0.136	0.485	0.456
Departure Headway (Hd)	6.338	5.626	7.638	6.42	6.806	6.296
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	570	634	471	556	528	569
Service Time	4.102	3.389	5.406	4.187	4.571	4.062
HCM Lane V/C Ratio	0.751	0.121	0.442	0.137	0.487	0.459
HCM Control Delay, s/veh	26.1	9.2	16.3	10.2	15.9	14.3
HCM Lane LOS	D	A	C	B	C	B
HCM 95th-tile Q	6.6	0.4	2.2	0.5	2.6	2.4



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	9	12	213	10	15	108
Future Volume (vph)	9	12	213	10	15	108
Ideal Flow (vphpl)	1750	1750	1900	1750	1750	1900
Storage Length (ft)	100	50		50	100	
Storage Lanes	1	0		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1630	1458	1863	1458	1630	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1630	1458	1863	1458	1630	1863
Link Speed (mph)	55		55			55
Link Distance (ft)	2679		2654			2339
Travel Time (s)	33.2		32.9			29.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	13	232	11	16	117
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	13	232	11	16	117
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.00	1.11	1.11	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	23.5%	ICU Level of Service	A
Analysis Period (min)	15		

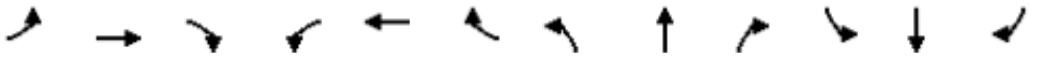
Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	12	213	10	15	108
Future Vol, veh/h	9	12	213	10	15	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	50	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	13	232	11	16	117

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	381	232	0	0	243	0
Stage 1	232	-	-	-	-	-
Stage 2	149	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	621	807	-	-	1323	-
Stage 1	807	-	-	-	-	-
Stage 2	879	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	614	807	-	-	1323	-
Mov Cap-2 Maneuver	614	-	-	-	-	-
Stage 1	807	-	-	-	-	-
Stage 2	868	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	10.1	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	614	807	1323	-
HCM Lane V/C Ratio	-	-	0.016	0.016	0.012	-
HCM Control Delay (s/veh)	-	-	11	9.5	7.8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	80	1	33	82	1	2	1	123	3	1	3
Future Volume (vph)	3	80	1	33	82	1	2	1	123	3	1	3
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	100		50	100		50	100		50	100		50
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1630	1863	1458	1630	1863	1458	1630	1863	1458	1630	1863	1458
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1630	1863	1458	1630	1863	1458	1630	1863	1458	1630	1863	1458
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2679			1533			2637			1348	
Travel Time (s)		33.2			19.0			32.7			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	87	1	36	89	1	2	1	134	3	1	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	87	1	36	89	1	2	1	134	3	1	3
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.8%		ICU Level of Service A	
Analysis Period (min) 15			

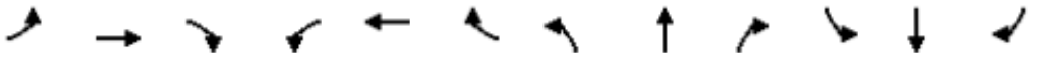
Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	80	1	33	82	1	2	1	123	3	1	3
Future Vol, veh/h	3	80	1	33	82	1	2	1	123	3	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	50	100	-	50	100	-	50	100	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	87	1	36	89	1	2	1	134	3	1	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	124	146	1	58	15	1	4	0	0	135	0	0
Stage 1	7	7	-	5	5	-	-	-	-	-	-	-
Stage 2	117	139	-	53	10	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	850	745	1084	939	879	1084	1618	-	-	1449	-	-
Stage 1	1015	890	-	1017	892	-	-	-	-	-	-	-
Stage 2	888	782	-	960	887	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	781	743	1084	852	876	1084	1618	-	-	1449	-	-
Mov Cap-2 Maneuver	781	743	-	852	876	-	-	-	-	-	-	-
Stage 1	1014	888	-	1016	891	-	-	-	-	-	-	-
Stage 2	797	781	-	863	885	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	10.4	9.5	0.1	3.2
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1618	-	-	781	743	1084	852	876	1084	1449	-	-
HCM Lane V/C Ratio	0.001	-	-	0.004	0.117	0.001	0.042	0.102	0.001	0.002	-	-
HCM Control Delay (s/veh)	7.2	-	-	9.6	10.5	8.3	9.4	9.6	8.3	7.5	-	-
HCM Lane LOS	A	-	-	A	B	A	A	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.4	0	0.1	0.3	0	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	58	33	56	77	205	48	221	35	101	198	7
Future Volume (vph)	1	58	33	56	77	205	48	221	35	101	198	7
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.951			0.918			0.984			0.997	
Flt Protected					0.992			0.992			0.984	
Satd. Flow (prot)	0	1771	0	0	1696	0	0	1818	0	0	1827	0
Flt Permitted					0.992			0.992			0.984	
Satd. Flow (perm)	0	1771	0	0	1696	0	0	1818	0	0	1827	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1796			2695			2949			2654	
Travel Time (s)		22.3			33.4			36.6			32.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	63	36	61	84	223	52	240	38	110	215	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	100	0	0	368	0	0	330	0	0	333	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

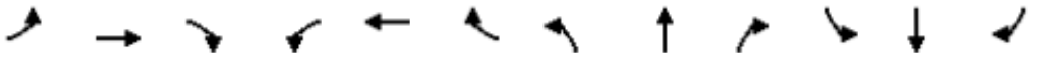
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.7%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	16.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	58	33	56	77	205	48	221	35	101	198	7
Future Vol, veh/h	1	58	33	56	77	205	48	221	35	101	198	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	63	36	61	84	223	52	240	38	110	215	8
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.1	17.1	16.3	16.8
HCM LOS	B	C	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	1%	17%	33%
Vol Thru, %	73%	63%	23%	65%
Vol Right, %	12%	36%	61%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	304	92	338	306
LT Vol	48	1	56	101
Through Vol	221	58	77	198
RT Vol	35	33	205	7
Lane Flow Rate	330	100	367	333
Geometry Grp	1	1	1	1
Degree of Util (X)	0.553	0.183	0.595	0.563
Departure Headway (Hd)	6.021	6.593	5.826	6.099
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	598	543	621	592
Service Time	4.065	4.651	3.865	4.144
HCM Lane V/C Ratio	0.552	0.184	0.591	0.563
HCM Control Delay, s/veh	16.3	11.1	17.1	16.8
HCM Lane LOS	C	B	C	C
HCM 95th-tile Q	3.4	0.7	3.9	3.5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	91	55	13	238	16	109	41	18	23	34	50
Future Volume (vph)	36	91	55	13	238	16	109	41	18	23	34	50
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		50	0		140	0		50	0		0
Storage Lanes	0		1	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.937	
Flt Protected		0.986			0.997			0.965			0.989	
Satd. Flow (prot)	0	1837	1458	0	1857	1458	0	1798	1458	0	1726	0
Flt Permitted		0.986			0.997			0.965			0.989	
Satd. Flow (perm)	0	1837	1458	0	1857	1458	0	1798	1458	0	1726	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2695			2169			2270			2637	
Travel Time (s)		33.4			26.9			28.1			32.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	99	60	14	259	17	118	45	20	25	37	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	138	60	0	273	17	0	163	20	0	116	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

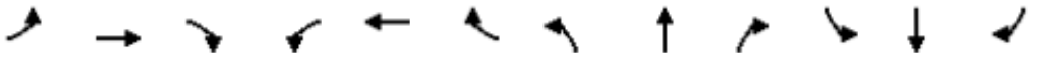
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	91	55	13	238	16	109	41	18	23	34	50
Future Vol, veh/h	36	91	55	13	238	16	109	41	18	23	34	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	99	60	14	259	17	118	45	20	25	37	54
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay, s/veh	9.9	12.7	11.4	10.5
HCM LOS	A	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	73%	0%	28%	0%	5%	0%	21%
Vol Thru, %	27%	0%	72%	0%	95%	0%	32%
Vol Right, %	0%	100%	0%	100%	0%	100%	47%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	150	18	127	55	251	16	107
LT Vol	109	0	36	0	13	0	23
Through Vol	41	0	91	0	238	0	34
RT Vol	0	18	0	55	0	16	50
Lane Flow Rate	163	20	138	60	273	17	116
Geometry Grp	5	5	5	5	5	5	4b
Degree of Util (X)	0.292	0.029	0.231	0.086	0.438	0.024	0.195
Departure Headway (Hd)	6.456	5.381	6.028	5.175	5.779	5.045	6.024
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	558	665	596	692	625	710	595
Service Time	4.19	3.114	3.76	2.906	3.507	2.773	4.06
HCM Lane V/C Ratio	0.292	0.03	0.232	0.087	0.437	0.024	0.195
HCM Control Delay, s/veh	11.8	8.3	10.6	8.4	13	7.9	10.5
HCM Lane LOS	B	A	B	A	B	A	B
HCM 95th-tile Q	1.2	0.1	0.9	0.3	2.2	0.1	0.7



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	54	0	368	147	432	0	0	472	241
Future Volume (vph)	0	0	0	54	0	368	147	432	0	0	472	241
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		0	0		350	200		0	80		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850					0.949	
Flt Protected					0.950		0.950					
Satd. Flow (prot)	0	0	0	0	1770	1458	1630	1863	0	1716	1768	0
Flt Permitted					0.950		0.950					
Satd. Flow (perm)	0	0	0	0	1770	1458	1630	1863	0	1716	1768	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1153			2492			645			504	
Travel Time (s)		14.3			30.9			8.0			6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	59	0	400	160	470	0	0	513	262
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	59	400	160	470	0	0	775	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

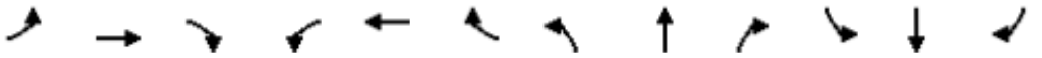
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	131.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	54	0	368	147	432	0	0	472	241
Future Vol, veh/h	0	0	0	54	0	368	147	432	0	0	472	241
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	59	0	400	160	470	0	0	513	262
Number of Lanes	0	0	0	0	1	1	1	1	0	1	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay, s/veh	28.9	43.6	263.1
HCM LOS	D	E	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	66%
Vol Right, %	0%	0%	0%	100%	0%	34%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	147	432	54	368	0	713
LT Vol	147	0	54	0	0	0
Through Vol	0	432	0	0	0	472
RT Vol	0	0	0	368	0	241
Lane Flow Rate	160	470	59	400	0	775
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	0.337	0.925	0.132	0.767	0	1.52
Departure Headway (Hd)	8.343	7.825	8.898	7.649	7.305	7.061
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	435	465	406	476	0	519
Service Time	6.043	5.525	6.598	5.349	5.07	4.826
HCM Lane V/C Ratio	0.368	1.011	0.145	0.84	0	1.493
HCM Control Delay, s/veh	15.2	53.2	12.9	31.3	10.1	263.1
HCM Lane LOS	C	F	B	D	N	F
HCM 95th-tile Q	1.5	10.7	0.5	6.6	0	40



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	189	2	70	0	0	0	0	395	76	236	244	0
Future Volume (vph)	189	2	70	0	0	0	0	395	76	236	244	0
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		220	0		0	0		90	150		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected		0.953								0.950		
Satd. Flow (prot)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1076			2120			2339			645	
Travel Time (s)		13.3			26.3			29.0			8.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	205	2	76	0	0	0	0	429	83	257	265	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	207	76	0	0	0	0	429	83	257	265	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.4%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	18.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	189	2	70	0	0	0	0	395	76	236	244	0
Future Vol, veh/h	189	2	70	0	0	0	0	395	76	236	244	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	205	2	76	0	0	0	0	429	83	257	265	0
Number of Lanes	0	1	1	0	0	0	0	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay, s/veh	14.7	23.6	15.2
HCM LOS	B	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	0%	99%	0%	100%	0%
Vol Thru, %	100%	0%	1%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	395	76	191	70	236	244
LT Vol	0	0	189	0	236	0
Through Vol	395	0	2	0	0	244
RT Vol	0	76	0	70	0	0
Lane Flow Rate	429	83	208	76	257	265
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	0.757	0.129	0.441	0.136	0.486	0.465
Departure Headway (Hd)	6.347	5.635	7.655	6.438	6.817	6.307
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	567	633	469	555	526	568
Service Time	4.112	3.399	5.425	4.206	4.582	4.073
HCM Lane V/C Ratio	0.757	0.131	0.443	0.137	0.489	0.467
HCM Control Delay, s/veh	26.4	9.2	16.4	10.2	15.9	14.5
HCM Lane LOS	D	A	C	B	C	B
HCM 95th-tile Q	6.7	0.4	2.2	0.5	2.6	2.4



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	16	216	11	19	108
Future Volume (vph)	12	16	216	11	19	108
Ideal Flow (vphpl)	1750	1750	1900	1750	1750	1900
Storage Length (ft)	100	50		50	100	
Storage Lanes	1	0		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1630	1458	1863	1458	1630	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1630	1458	1863	1458	1630	1863
Link Speed (mph)	55		55			55
Link Distance (ft)	739		548			2339
Travel Time (s)	9.2		6.8			29.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	17	235	12	21	117
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	17	235	12	21	117
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.00	1.11	1.11	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	27.1%	ICU Level of Service	A
Analysis Period (min)	15		

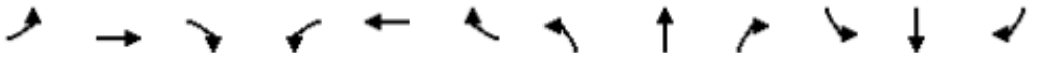
Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	16	216	11	19	108
Future Vol, veh/h	12	16	216	11	19	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	50	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	17	235	12	21	117

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	394	235	0	0	247	0
Stage 1	235	-	-	-	-	-
Stage 2	159	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	611	804	-	-	1319	-
Stage 1	804	-	-	-	-	-
Stage 2	870	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	601	804	-	-	1319	-
Mov Cap-2 Maneuver	601	-	-	-	-	-
Stage 1	804	-	-	-	-	-
Stage 2	856	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	10.2	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	601	804	1319	-
HCM Lane V/C Ratio	-	-	0.022	0.022	0.016	-
HCM Control Delay (s/veh)	-	-	11.1	9.6	7.8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	84	1	35	82	1	2	1	136	3	1	3
Future Volume (vph)	3	84	1	35	82	1	2	1	136	3	1	3
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	100		50	100		50	100		50	100		50
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1630	1863	1458	1630	1863	1458	1630	1863	1458	1630	1863	1458
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1630	1863	1458	1630	1863	1458	1630	1863	1458	1630	1863	1458
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1360			1533			635			1348	
Travel Time (s)		16.9			19.0			7.9			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	91	1	38	89	1	2	1	148	3	1	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	91	1	38	89	1	2	1	148	3	1	3
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.9%		ICU Level of Service A	
Analysis Period (min) 15			

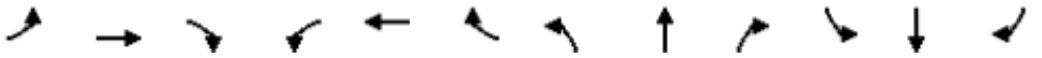
Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	84	1	35	82	1	2	1	136	3	1	3
Future Vol, veh/h	3	84	1	35	82	1	2	1	136	3	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	50	100	-	50	100	-	50	100	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	91	1	38	89	1	2	1	148	3	1	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	131	160	1	60	15	1	4	0	0	149	0	0
Stage 1	7	7	-	5	5	-	-	-	-	-	-	-
Stage 2	124	153	-	55	10	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	841	732	1084	936	879	1084	1618	-	-	1432	-	-
Stage 1	1015	890	-	1017	892	-	-	-	-	-	-	-
Stage 2	880	771	-	957	887	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	773	730	1084	843	876	1084	1618	-	-	1432	-	-
Mov Cap-2 Maneuver	773	730	-	843	876	-	-	-	-	-	-	-
Stage 1	1014	888	-	1016	891	-	-	-	-	-	-	-
Stage 2	790	770	-	856	885	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	10.5	9.6	0.1	3.2
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1618	-	-	773	730	1084	843	876	1084	1432	-	-
HCM Lane V/C Ratio	0.001	-	-	0.004	0.125	0.001	0.045	0.102	0.001	0.002	-	-
HCM Control Delay (s/veh)	7.2	-	-	9.7	10.6	8.3	9.5	9.6	8.3	7.5	-	-
HCM Lane LOS	A	-	-	A	B	A	A	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.4	0	0.1	0.3	0	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	58	33	56	77	206	48	222	35	105	208	7
Future Volume (vph)	1	58	33	56	77	206	48	222	35	105	208	7
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.951			0.918			0.985			0.997	
Flt Protected					0.992			0.992			0.984	
Satd. Flow (prot)	0	1771	0	0	1696	0	0	1820	0	0	1827	0
Flt Permitted					0.992			0.992			0.984	
Satd. Flow (perm)	0	1771	0	0	1696	0	0	1820	0	0	1827	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1796			2695			2949			2106	
Travel Time (s)		22.3			33.4			36.6			26.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	63	36	61	84	224	52	241	38	114	226	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	100	0	0	369	0	0	331	0	0	348	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

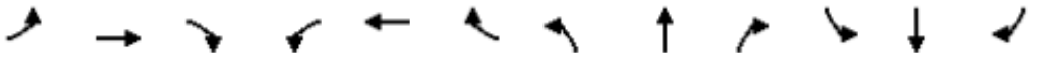
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 65.1%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	16.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	58	33	56	77	206	48	222	35	105	208	7
Future Vol, veh/h	1	58	33	56	77	206	48	222	35	105	208	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	63	36	61	84	224	52	241	38	114	226	8
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.3	17.5	16.6	17.7
HCM LOS	B	C	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	1%	17%	33%
Vol Thru, %	73%	63%	23%	65%
Vol Right, %	11%	36%	61%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	305	92	339	320
LT Vol	48	1	56	105
Through Vol	222	58	77	208
RT Vol	35	33	206	7
Lane Flow Rate	332	100	368	348
Geometry Grp	1	1	1	1
Degree of Util (X)	0.559	0.185	0.602	0.592
Departure Headway (Hd)	6.075	6.675	5.886	6.126
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	593	536	612	588
Service Time	4.122	4.738	3.929	4.171
HCM Lane V/C Ratio	0.56	0.187	0.601	0.592
HCM Control Delay, s/veh	16.6	11.3	17.5	17.7
HCM Lane LOS	C	B	C	C
HCM 95th-tile Q	3.4	0.7	4	3.9



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	95	55	13	239	16	109	41	18	29	39	50
Future Volume (vph)	36	95	55	13	239	16	109	41	18	29	39	50
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		50	0		140	0		50	0		0
Storage Lanes	0		1	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.943	
Flt Protected		0.986			0.997			0.965			0.988	
Satd. Flow (prot)	0	1837	1458	0	1857	1458	0	1798	1458	0	1735	0
Flt Permitted		0.986			0.997			0.965			0.988	
Satd. Flow (perm)	0	1837	1458	0	1857	1458	0	1798	1458	0	1735	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2695			2169			2270			2002	
Travel Time (s)		33.4			26.9			28.1			24.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	103	60	14	260	17	118	45	20	32	42	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	142	60	0	274	17	0	163	20	0	128	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	95	55	13	239	16	109	41	18	29	39	50
Future Vol, veh/h	36	95	55	13	239	16	109	41	18	29	39	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	103	60	14	260	17	118	45	20	32	42	54
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay, s/veh	10	12.9	11.6	10.8
HCM LOS	A	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	73%	0%	27%	0%	5%	0%	25%
Vol Thru, %	27%	0%	73%	0%	95%	0%	33%
Vol Right, %	0%	100%	0%	100%	0%	100%	42%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	150	18	131	55	252	16	118
LT Vol	109	0	36	0	13	0	29
Through Vol	41	0	95	0	239	0	39
RT Vol	0	18	0	55	0	16	50
Lane Flow Rate	163	20	142	60	274	17	128
Geometry Grp	5	5	5	5	5	5	4b
Degree of Util (X)	0.295	0.03	0.24	0.087	0.444	0.025	0.217
Departure Headway (Hd)	6.506	5.43	6.077	5.228	5.833	5.099	6.086
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	553	659	591	685	619	702	590
Service Time	4.244	3.168	3.816	2.967	3.567	2.833	4.128
HCM Lane V/C Ratio	0.295	0.03	0.24	0.088	0.443	0.024	0.217
HCM Control Delay, s/veh	12	8.3	10.7	8.5	13.2	8	10.8
HCM Lane LOS	B	A	B	A	B	A	B
HCM 95th-tile Q	1.2	0.1	0.9	0.3	2.3	0.1	0.8



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	82	5	0	68	11	0
Future Volume (vph)	82	5	0	68	11	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.993					
Flt Protected					0.950	
Satd. Flow (prot)	1850	0	0	1863	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	1850	0	0	1863	1770	0
Link Speed (mph)	55			55	55	
Link Distance (ft)	739			580	300	
Travel Time (s)	9.2			7.2	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	5	0	74	12	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	94	0	0	74	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 14.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	82	5	0	68	11	0
Future Vol, veh/h	82	5	0	68	11	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	89	5	0	74	12	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	94	0	166	92
Stage 1	-	-	-	-	92	-
Stage 2	-	-	-	-	74	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1500	-	824	965
Stage 1	-	-	-	-	932	-
Stage 2	-	-	-	-	949	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1500	-	824	965
Mov Cap-2 Maneuver	-	-	-	-	824	-
Stage 1	-	-	-	-	932	-
Stage 2	-	-	-	-	949	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	824	-	-	1500	-
HCM Lane V/C Ratio	0.015	-	-	-	-
HCM Control Delay (s/veh)	9.4	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	7	229	2	0	113
Future Volume (vph)	0	7	229	2	0	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865	0.999			
Flt Protected						
Satd. Flow (prot)	0	1611	1861	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	1611	1861	0	0	1863
Link Speed (mph)	55		55			55
Link Distance (ft)	2684		2106			548
Travel Time (s)	33.3		26.1			6.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	8	249	2	0	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	8	251	0	0	123
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	7	229	2	0	113
Future Vol, veh/h	0	7	229	2	0	113
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	8	249	2	0	123

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	250	0	0	251	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	0	789	-	-	1314	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	789	-	-	1314	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	789	1314	-
HCM Lane V/C Ratio	-	-	0.01	-	-
HCM Control Delay (s/veh)	-	-	9.6	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	11	4	0	0	4
Future Volume (vph)	13	11	4	0	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.938				0.865	
Flt Protected	0.974			0.950		
Satd. Flow (prot)	1702	0	0	1770	1611	0
Flt Permitted	0.974			0.950		
Satd. Flow (perm)	1702	0	0	1770	1611	0
Link Speed (mph)	55			55	55	
Link Distance (ft)	2684			2002	635	
Travel Time (s)	33.3			24.8	7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	12	4	0	0	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	0	0	4	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	11	4	0	0	4
Future Vol, veh/h	13	11	4	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	12	4	0	0	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	10	2	4	0	-	0
Stage 1	2	-	-	-	-	-
Stage 2	8	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1010	1082	1618	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	1015	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1008	1082	1618	-	-	-
Mov Cap-2 Maneuver	1008	-	-	-	-	-
Stage 1	1019	-	-	-	-	-
Stage 2	1015	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.5	7.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1618	-	1041	-	-
HCM Lane V/C Ratio	0.003	-	0.025	-	-
HCM Control Delay (s/veh)	7.2	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

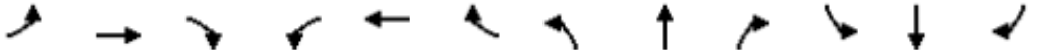
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	54	0	368	147	432	0	0	472	241
Future Volume (vph)	0	0	0	54	0	368	147	432	0	0	472	241
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		0	0		350	200		0	80		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850						0.850
Flt Protected					0.950		0.950					
Satd. Flow (prot)	0	0	0	0	1770	1458	1630	1863	0	0	1863	1458
Flt Permitted					0.950		0.449					
Satd. Flow (perm)	0	0	0	0	1770	1458	770	1863	0	0	1863	1458
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						348						262
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1153			2492			645			504	
Travel Time (s)		14.3			30.9			8.0			6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	59	0	400	160	470	0	0	513	262
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	59	400	160	470	0	0	513	262
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	1	1	1	1			1	1
Detector Template												
Leading Detector (ft)				50	50	50	50	50			50	50
Trailing Detector (ft)				0	0	0	0	0			0	0
Detector 1 Position(ft)				0	0	0	0	0			0	0
Detector 1 Size(ft)				50	50	50	50	50			50	50
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases				8		8	2					6
Detector Phase				8	8	8	2	2			6	6
Switch Phase												
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0			4.0	4.0
Minimum Split (s)				24.0	24.0	24.0	24.0	24.0			24.0	24.0
Total Split (s)				36.0	36.0	36.0	54.0	54.0			54.0	54.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)				40.0%	40.0%	40.0%	60.0%	60.0%			60.0%	60.0%
Maximum Green (s)				30.0	30.0	30.0	48.0	48.0			48.0	48.0
Yellow Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0			1.0	1.0
Lost Time Adjust (s)					0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)					6.0	6.0	6.0	6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode				None	None	None	C-Max	C-Max			C-Max	C-Max
Walk Time (s)				7.0	7.0	7.0	7.0	7.0			7.0	7.0
Flash Don't Walk (s)				11.0	11.0	11.0	11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0	0	0	0			0	0
Act Effct Green (s)					12.0	12.0	66.0	66.0			66.0	66.0
Actuated g/C Ratio					0.13	0.13	0.73	0.73			0.73	0.73
v/c Ratio					0.25	0.81	0.28	0.34			0.38	0.23
Control Delay (s/veh)					34.6	19.7	5.0	4.2			6.5	1.4
Queue Delay					0.0	0.0	0.0	0.0			0.0	0.0
Total Delay (s/veh)					34.6	19.7	5.0	4.2			6.5	1.4
LOS					C	B	A	A			A	A
Approach Delay (s/veh)					21.6			4.4			4.8	
Approach LOS					C			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay (s/veh): 8.8		Intersection LOS: A	
Intersection Capacity Utilization 60.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: Shirk St & SR 198 WB Ramps

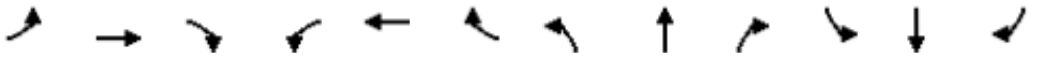




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	54	0	368	147	432	0	0	472	241
Future Volume (veh/h)	0	0	0	54	0	368	147	432	0	0	472	241
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1750	1863	1716	1716	1863	0	0	1863	1716
Adj Flow Rate, veh/h				59	0	400	160	470	0	0	513	262
Adj No. of Lanes				0	1	1	1	1	0	0	1	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				526	0	433	340	1062	0	0	1062	831
Arrive On Green				0.30	0.00	0.30	1.00	1.00	0.00	0.00	0.57	0.57
Sat Flow, veh/h				1774	0	1458	638	1863	0	0	1863	1458
Grp Volume(v), veh/h				59	0	400	160	470	0	0	513	262
Grp Sat Flow(s),veh/h/ln				1774	0	1458	638	1863	0	0	1863	1458
Q Serve(g_s), s				2.2	0.0	23.9	11.5	0.0	0.0	0.0	14.7	8.5
Cycle Q Clear(g_c), s				2.2	0.0	23.9	26.2	0.0	0.0	0.0	14.7	8.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				526	0	433	340	1062	0	0	1062	831
V/C Ratio(X)				0.11	0.00	0.92	0.47	0.44	0.00	0.00	0.48	0.32
Avail Cap(c_a), veh/h				591	0	486	340	1062	0	0	1062	831
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.95	0.95	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				23.0	0.0	30.7	3.8	0.0	0.0	0.0	11.5	10.1
Incr Delay (d2), s/veh				0.1	0.0	22.3	4.4	1.3	0.0	0.0	1.6	1.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.1	0.0	12.2	2.4	0.4	0.0	0.0	8.0	3.6
LnGrp Delay(d), s/veh				23.1	0.0	53.0	8.2	1.3	0.0	0.0	13.1	11.1
LnGrp LOS				C		D	A	A			B	B
Approach Vol, veh/h					459			630			775	
Approach Delay, s/veh					49.1			3.0			12.4	
Approach LOS					D			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		57.3				57.3		32.7
Change Period (Y+Rc), s		6.0				6.0		6.0
Max Green Setting (Gmax), s		48.0				48.0		30.0
Max Q Clear Time (g_c+I1), s		28.2				16.7		25.9
Green Ext Time (p_c), s		3.2				3.1		0.8

Intersection Summary	
HCM 2010 Ctrl Delay, s/veh	18.3
HCM 2010 LOS	B



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	189	2	70	0	0	0	0	395	76	236	244	0
Future Volume (vph)	189	2	70	0	0	0	0	395	76	236	244	0
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		220	0		0	0		90	150		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected		0.953								0.950		
Satd. Flow (prot)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Flt Permitted		0.953								0.493		
Satd. Flow (perm)	0	1775	1458	0	0	0	0	1863	1458	846	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			76						83			
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1076			2120			2339			645	
Travel Time (s)		13.3			26.3			29.0			8.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	205	2	76	0	0	0	0	429	83	257	265	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	207	76	0	0	0	0	429	83	257	265	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1					1	1	1	1	
Detector Template												
Leading Detector (ft)	50	50	50					50	50	50	50	
Trailing Detector (ft)	0	0	0					0	0	0	0	
Detector 1 Position(ft)	0	0	0					0	0	0	0	
Detector 1 Size(ft)	50	50	50					50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Turn Type	Perm	NA	Perm					NA	Perm	Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4		4						2	6		
Detector Phase	4	4	4					2	2	6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0					24.0	24.0	24.0	24.0	
Total Split (s)	24.0	24.0	24.0					66.0	66.0	66.0	66.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	26.7%	26.7%	26.7%					73.3%	73.3%	73.3%	73.3%	
Maximum Green (s)	18.0	18.0	18.0					60.0	60.0	60.0	60.0	
Yellow Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0	6.0					6.0	6.0	6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0					11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0					0	0	0	0	
Act Effct Green (s)		15.0	15.0					63.0	63.0	63.0	63.0	
Actuated g/C Ratio		0.17	0.17					0.70	0.70	0.70	0.70	
v/c Ratio		0.70	0.25					0.33	0.08	0.43	0.20	
Control Delay (s/veh)		48.1	9.9					6.7	2.2	8.5	4.4	
Queue Delay		0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay (s/veh)		48.1	9.9					6.7	2.2	8.5	4.4	
LOS		D	A					A	A	A	A	
Approach Delay (s/veh)		37.9						6.0			6.4	
Approach LOS		D						A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay (s/veh): 13.0		Intersection LOS: B	
Intersection Capacity Utilization 60.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Shirk St & SR 138 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	189	2	70	0	0	0	0	395	76	236	244	0
Future Volume (veh/h)	189	2	70	0	0	0	0	395	76	236	244	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1750	1863	1716				0	1863	1716	1716	1863	0
Adj Flow Rate, veh/h	205	2	76				0	429	83	257	265	0
Adj No. of Lanes	0	1	1				0	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	248	2	206				0	1352	1058	604	1352	0
Arrive On Green	0.14	0.14	0.14				0.00	0.73	0.73	1.00	1.00	0.00
Sat Flow, veh/h	1758	17	1458				0	1863	1458	815	1863	0
Grp Volume(v), veh/h	207	0	76				0	429	83	257	265	0
Grp Sat Flow(s),veh/h/ln	1775	0	1458				0	1863	1458	815	1863	0
Q Serve(g_s), s	10.2	0.0	4.3				0.0	7.4	1.5	5.7	0.0	0.0
Cycle Q Clear(g_c), s	10.2	0.0	4.3				0.0	7.4	1.5	13.1	0.0	0.0
Prop In Lane	0.99		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	250	0	206				0	1352	1058	604	1352	0
V/C Ratio(X)	0.83	0.00	0.37				0.00	0.32	0.08	0.43	0.20	0.00
Avail Cap(c_a), veh/h	355	0	292				0	1352	1058	604	1352	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.93	0.93	0.00
Uniform Delay (d), s/veh	37.6	0.0	35.0				0.0	4.4	3.6	0.7	0.0	0.0
Incr Delay (d2), s/veh	10.5	0.0	1.1				0.0	0.6	0.1	2.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	1.8				0.0	3.9	0.6	1.6	0.1	0.0
LnGrp Delay(d), s/veh	48.1	0.0	36.1				0.0	5.0	3.7	2.8	0.3	0.0
LnGrp LOS	D		D					A	A	A	A	
Approach Vol, veh/h		283						512			522	
Approach Delay, s/veh		44.9						4.8			1.5	
Approach LOS		D						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		71.3		18.7		71.3		
Change Period (Y+Rc), s		6.0		6.0		6.0		
Max Green Setting (Gmax), s		60.0		18.0		60.0		
Max Q Clear Time (g_c+I1), s		9.4		12.2		15.1		
Green Ext Time (p_c), s		1.9		0.5		3.0		

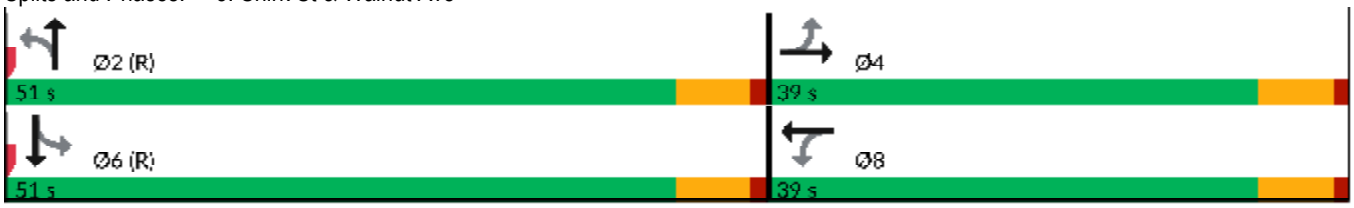
Intersection Summary	
HCM 2010 Ctrl Delay, s/veh	12.1
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	58	33	56	77	206	48	222	35	105	208	7
Future Volume (vph)	1	58	33	56	77	206	48	222	35	105	208	7
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.951			0.918			0.985			0.997	
Flt Protected					0.992			0.992			0.984	
Satd. Flow (prot)	0	1771	0	0	1696	0	0	1820	0	0	1827	0
Flt Permitted		0.996			0.927			0.901			0.784	
Satd. Flow (perm)	0	1764	0	0	1585	0	0	1653	0	0	1456	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			98			10			2	
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1796			2695			2949			2654	
Travel Time (s)		22.3			33.4			36.6			32.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	63	36	61	84	224	52	241	38	114	226	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	100	0	0	369	0	0	331	0	0	348	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	50	50		50	50		50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	39.0	39.0		39.0	39.0		51.0	51.0		51.0	51.0	
Total Split (%)	43.3%	43.3%		43.3%	43.3%		56.7%	56.7%		56.7%	56.7%	
Maximum Green (s)	33.0	33.0		33.0	33.0		45.0	45.0		45.0	45.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		21.7			21.7			56.3			56.3	
Actuated g/C Ratio		0.24			0.24			0.63			0.63	
v/c Ratio		0.22			0.81			0.32			0.38	
Control Delay (s/veh)		17.3			36.8			10.0			12.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		17.3			36.8			10.0			12.3	
LOS		B			D			B			B	
Approach Delay (s/veh)		17.3			36.8			10.0			12.3	
Approach LOS		B			D			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay (s/veh): 19.9		Intersection LOS: B	
Intersection Capacity Utilization 68.4%		ICU Level of Service C	
Analysis Period (min) 15			

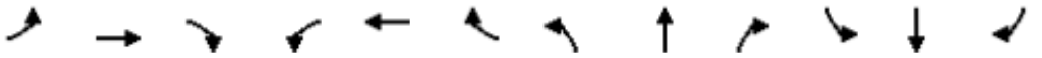
Splits and Phases: 5: Shirk St & Walnut Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	58	33	56	77	206	48	222	35	105	208	7
Future Volume (veh/h)	1	58	33	56	77	206	48	222	35	105	208	7
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1750	1863	1750	1750	1863	1750	1750	1863	1750	1750	1863	1750
Adj Flow Rate, veh/h	1	63	36	61	84	224	52	241	38	114	226	8
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	41	287	162	97	111	249	175	787	119	337	645	22
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.61	0.61	0.61	0.61	0.61	0.61
Sat Flow, veh/h	3	1119	631	199	431	973	211	1290	195	465	1057	36
Grp Volume(v), veh/h	100	0	0	369	0	0	331	0	0	348	0	0
Grp Sat Flow(s),veh/h/ln	1753	0	0	1603	0	0	1695	0	0	1558	0	0
Q Serve(g_s), s	0.0	0.0	0.0	14.4	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Cycle Q Clear(g_c), s	4.1	0.0	0.0	20.0	0.0	0.0	7.8	0.0	0.0	8.3	0.0	0.0
Prop In Lane	0.01		0.36	0.17		0.61	0.16		0.11	0.33		0.02
Lane Grp Cap(c), veh/h	490	0	0	457	0	0	1081	0	0	1004	0	0
V/C Ratio(X)	0.20	0.00	0.00	0.81	0.00	0.00	0.31	0.00	0.00	0.35	0.00	0.00
Avail Cap(c_a), veh/h	682	0	0	632	0	0	1081	0	0	1004	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	26.4	0.0	0.0	32.2	0.0	0.0	8.3	0.0	0.0	8.4	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	5.4	0.0	0.0	0.7	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	9.5	0.0	0.0	4.1	0.0	0.0	4.4	0.0	0.0
LnGrp Delay(d), s/veh	26.6	0.0	0.0	37.6	0.0	0.0	9.1	0.0	0.0	9.4	0.0	0.0
LnGrp LOS	C			D			A			A		
Approach Vol, veh/h		100			369			331			348	
Approach Delay, s/veh		26.6			37.6			9.1			9.4	
Approach LOS		C			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		60.9		29.1		60.9		29.1
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		45.0		33.0		45.0		33.0
Max Q Clear Time (g_c+I1), s		9.8		6.1		10.3		22.0
Green Ext Time (p_c), s		1.2		0.3		1.4		1.1

Intersection Summary	
HCM 2010 Ctrl Delay, s/veh	19.9
HCM 2010 LOS	B



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	58	0	401	163	532	0	0	610	277
Future Volume (vph)	0	0	0	58	0	401	163	532	0	0	610	277
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		0	0		350	200		0	80		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850						0.850
Flt Protected					0.950		0.950					
Satd. Flow (prot)	0	0	0	0	1770	1458	1630	1863	0	0	1863	1458
Flt Permitted					0.950		0.950					
Satd. Flow (perm)	0	0	0	0	1770	1458	1630	1863	0	0	1863	1458
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1153			2492			645			504	
Travel Time (s)		14.3			30.9			8.0			6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	63	0	436	177	578	0	0	663	301
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	63	436	177	578	0	0	663	301
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

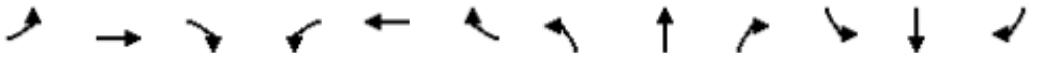
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.9%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	114.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	58	0	401	163	532	0	0	610	277
Future Vol, veh/h	0	0	0	58	0	401	163	532	0	0	610	277
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	63	0	436	177	578	0	0	663	301
Number of Lanes	0	0	0	0	1	1	1	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay, s/veh	42.9	115.1	151.3
HCM LOS	E	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	163	532	58	401	610	277
LT Vol	163	0	58	0	0	0
Through Vol	0	532	0	0	610	0
RT Vol	0	0	0	401	0	277
Lane Flow Rate	177	578	63	436	663	301
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	0.4	1.225	0.149	0.887	1.391	0.573
Departure Headway (Hd)	8.615	8.097	9.212	7.967	7.929	7.203
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	420	451	391	458	464	503
Service Time	6.315	5.797	6.912	5.667	5.629	4.903
HCM Lane V/C Ratio	0.421	1.282	0.161	0.952	1.429	0.598
HCM Control Delay, s/veh	16.9	145.2	13.5	47.1	211.3	19.1
HCM Lane LOS	C	F	B	E	F	C
HCM 95th-tile Q	1.9	21.9	0.5	9.5	30.1	3.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	2	74	0	0	0	0	514	81	262	296	0
Future Volume (vph)	198	2	74	0	0	0	0	514	81	262	296	0
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		220	0		0	0		90	150		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected		0.953								0.950		
Satd. Flow (prot)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1076			2120			2339			645	
Travel Time (s)		13.3			26.3			29.0			8.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	215	2	80	0	0	0	0	559	88	285	322	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	217	80	0	0	0	0	559	88	285	322	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	37
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	198	2	74	0	0	0	0	514	81	262	296	0
Future Vol, veh/h	198	2	74	0	0	0	0	514	81	262	296	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	215	2	80	0	0	0	0	559	88	285	322	0
Number of Lanes	0	1	1	0	0	0	0	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay, s/veh	16.6	63.3	19
HCM LOS	C	F	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	0%	99%	0%	100%	0%
Vol Thru, %	100%	0%	1%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	514	81	200	74	262	296
LT Vol	0	0	198	0	262	0
Through Vol	514	0	2	0	0	296
RT Vol	0	81	0	74	0	0
Lane Flow Rate	559	88	217	80	285	322
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	1.028	0.145	0.492	0.155	0.568	0.596
Departure Headway (Hd)	6.627	5.912	8.146	6.92	7.18	6.669
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	542	601	439	515	498	537
Service Time	4.417	3.702	5.939	4.712	4.978	4.466
HCM Lane V/C Ratio	1.031	0.146	0.494	0.155	0.572	0.6
HCM Control Delay, s/veh	71.8	9.7	18.7	11	19.1	19
HCM Lane LOS	F	A	C	B	C	C
HCM 95th-tile Q	15.3	0.5	2.7	0.5	3.5	3.9



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	9	12	213	10	15	108
Future Volume (vph)	9	12	213	10	15	108
Ideal Flow (vphpl)	1750	1750	1900	1750	1750	1900
Storage Length (ft)	100	50		50	100	
Storage Lanes	1	0		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1630	1458	1863	1458	1630	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1630	1458	1863	1458	1630	1863
Link Speed (mph)	55		55			55
Link Distance (ft)	2679		2654			2339
Travel Time (s)	33.2		32.9			29.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	13	232	11	16	117
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	13	232	11	16	117
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.00	1.11	1.11	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	23.5%	ICU Level of Service	A
Analysis Period (min)	15		

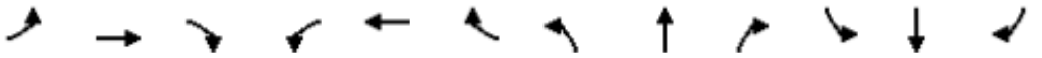
Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	12	213	10	15	108
Future Vol, veh/h	9	12	213	10	15	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	50	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	13	232	11	16	117

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	381	232	0	0	243	0
Stage 1	232	-	-	-	-	-
Stage 2	149	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	621	807	-	-	1323	-
Stage 1	807	-	-	-	-	-
Stage 2	879	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	614	807	-	-	1323	-
Mov Cap-2 Maneuver	614	-	-	-	-	-
Stage 1	807	-	-	-	-	-
Stage 2	868	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	10.1	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	614	807	1323	-
HCM Lane V/C Ratio	-	-	0.016	0.016	0.012	-
HCM Control Delay (s/veh)	-	-	11	9.5	7.8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	104	1	36	102	1	2	1	134	4	1	3
Future Volume (vph)	3	104	1	36	102	1	2	1	134	4	1	3
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	100		50	100		50	100		50	100		50
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1630	1863	1458	1630	1863	1458	1630	1863	1458	1630	1863	1458
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1630	1863	1458	1630	1863	1458	1630	1863	1458	1630	1863	1458
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2679			1533			2637			1348	
Travel Time (s)		33.2			19.0			32.7			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	113	1	39	111	1	2	1	146	4	1	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	113	1	39	111	1	2	1	146	4	1	3
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.8%		ICU Level of Service A	
Analysis Period (min) 15			

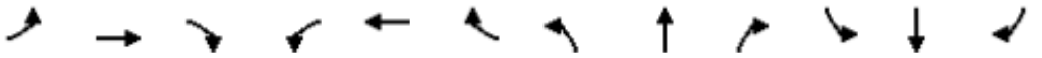
Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	104	1	36	102	1	2	1	134	4	1	3
Future Vol, veh/h	3	104	1	36	102	1	2	1	134	4	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	50	100	-	50	100	-	50	100	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	113	1	39	111	1	2	1	146	4	1	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	143	160	1	73	17	1	4	0	0	147	0	0
Stage 1	9	9	-	5	5	-	-	-	-	-	-	-
Stage 2	134	151	-	68	12	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	826	732	1084	918	877	1084	1618	-	-	1435	-	-
Stage 1	1012	888	-	1017	892	-	-	-	-	-	-	-
Stage 2	869	772	-	942	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	743	729	1084	805	873	1084	1618	-	-	1435	-	-
Mov Cap-2 Maneuver	743	729	-	805	873	-	-	-	-	-	-	-
Stage 1	1011	885	-	1016	891	-	-	-	-	-	-	-
Stage 2	759	771	-	819	883	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	10.8	9.7	0.1	3.8
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1618	-	-	743	729	1084	805	873	1084	1435	-	-
HCM Lane V/C Ratio	0.001	-	-	0.004	0.155	0.001	0.049	0.127	0.001	0.003	-	-
HCM Control Delay (s/veh)	7.2	-	-	9.9	10.8	8.3	9.7	9.7	8.3	7.5	-	-
HCM Lane LOS	A	-	-	A	B	A	A	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.5	0	0.2	0.4	0	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	69	36	58	79	210	54	283	40	114	254	8
Future Volume (vph)	1	69	36	58	79	210	54	283	40	114	254	8
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.954			0.918			0.986			0.997	
Flt Protected					0.992			0.993			0.985	
Satd. Flow (prot)	0	1777	0	0	1696	0	0	1824	0	0	1829	0
Flt Permitted					0.992			0.993			0.985	
Satd. Flow (perm)	0	1777	0	0	1696	0	0	1824	0	0	1829	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1796			2695			2949			2654	
Travel Time (s)		22.3			33.4			36.6			32.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	75	39	63	86	228	59	308	43	124	276	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	115	0	0	377	0	0	410	0	0	409	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

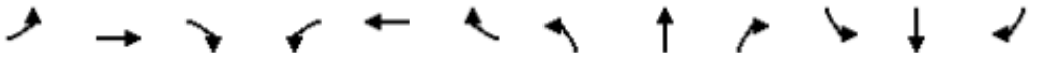
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 71.0%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	25.5
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	69	36	58	79	210	54	283	40	114	254	8
Future Vol, veh/h	1	69	36	58	79	210	54	283	40	114	254	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	75	39	63	86	228	59	308	43	124	276	9
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	13.2	23.6	27.7	28.5
HCM LOS	B	C	D	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	1%	17%	30%
Vol Thru, %	75%	65%	23%	68%
Vol Right, %	11%	34%	61%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	377	106	347	376
LT Vol	54	1	58	114
Through Vol	283	69	79	254
RT Vol	40	36	210	8
Lane Flow Rate	410	115	377	409
Geometry Grp	1	1	1	1
Degree of Util (X)	0.758	0.245	0.696	0.765
Departure Headway (Hd)	6.66	7.663	6.642	6.735
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	545	467	543	535
Service Time	4.702	5.739	4.683	4.777
HCM Lane V/C Ratio	0.752	0.246	0.694	0.764
HCM Control Delay, s/veh	27.7	13.2	23.6	28.5
HCM Lane LOS	D	B	C	D
HCM 95th-tile Q	6.7	1	5.4	6.8



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	94	57	16	338	19	117	47	20	24	39	53
Future Volume (vph)	37	94	57	16	338	19	117	47	20	24	39	53
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		50	0		140	0		50	0		0
Storage Lanes	0		1	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.938	
Flt Protected		0.986			0.998			0.966			0.990	
Satd. Flow (prot)	0	1837	1458	0	1859	1458	0	1799	1458	0	1730	0
Flt Permitted		0.986			0.998			0.966			0.990	
Satd. Flow (perm)	0	1837	1458	0	1859	1458	0	1799	1458	0	1730	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2695			2169			2270			2637	
Travel Time (s)		33.4			26.9			28.1			32.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	102	62	17	367	21	127	51	22	26	42	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	142	62	0	384	21	0	178	22	0	126	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

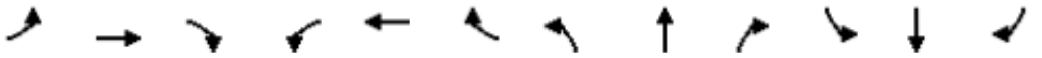
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	14.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	94	57	16	338	19	117	47	20	24	39	53
Future Vol, veh/h	37	94	57	16	338	19	117	47	20	24	39	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	102	62	17	367	21	127	51	22	26	42	58
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay, s/veh	10.6	18.1	12.7	11.5
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	71%	0%	28%	0%	5%	0%	21%
Vol Thru, %	29%	0%	72%	0%	95%	0%	34%
Vol Right, %	0%	100%	0%	100%	0%	100%	46%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	164	20	131	57	354	19	116
LT Vol	117	0	37	0	16	0	24
Through Vol	47	0	94	0	338	0	39
RT Vol	0	20	0	57	0	19	53
Lane Flow Rate	178	22	142	62	385	21	126
Geometry Grp	5	5	5	5	5	5	4b
Degree of Util (X)	0.341	0.035	0.252	0.095	0.637	0.03	0.228
Departure Headway (Hd)	6.886	5.813	6.382	5.526	5.956	5.224	6.508
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	521	613	561	646	604	683	550
Service Time	4.647	3.574	4.142	3.286	3.704	2.971	4.577
HCM Lane V/C Ratio	0.342	0.036	0.253	0.096	0.637	0.031	0.229
HCM Control Delay, s/veh	13.2	8.8	11.3	8.9	18.6	8.1	11.5
HCM Lane LOS	B	A	B	A	C	A	B
HCM 95th-tile Q	1.5	0.1	1	0.3	4.5	0.1	0.9



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	62	0	401	163	536	0	0	613	277
Future Volume (vph)	0	0	0	62	0	401	163	536	0	0	613	277
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		0	0		350	200		0	80		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850					0.953	
Flt Protected					0.950		0.950					
Satd. Flow (prot)	0	0	0	0	1770	1458	1630	1863	0	1716	1775	0
Flt Permitted					0.950		0.950					
Satd. Flow (perm)	0	0	0	0	1770	1458	1630	1863	0	1716	1775	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1153			2492			645			504	
Travel Time (s)		14.3			30.9			8.0			6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	67	0	436	177	583	0	0	666	301
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	67	436	177	583	0	0	967	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

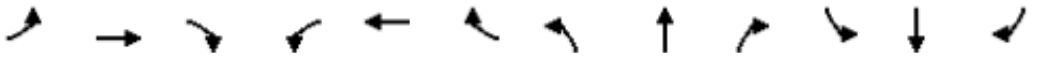
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.7%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	238.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	62	0	401	163	536	0	0	613	277
Future Vol, veh/h	0	0	0	62	0	401	163	536	0	0	613	277
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	67	0	436	177	583	0	0	666	301
Number of Lanes	0	0	0	0	1	1	1	1	0	1	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay, s/veh	38.2	105.3	446.6
HCM LOS	E	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	69%
Vol Right, %	0%	0%	0%	100%	0%	31%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	163	536	62	401	0	890
LT Vol	163	0	62	0	0	0
Through Vol	0	536	0	0	0	613
RT Vol	0	0	0	401	0	277
Lane Flow Rate	177	583	67	436	0	967
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	0.385	1.185	0.153	0.846	0	1.936
Departure Headway (Hd)	9.036	8.512	9.452	8.188	7.807	7.581
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	400	431	382	445	0	493
Service Time	6.736	6.212	7.152	5.888	5.507	5.281
HCM Lane V/C Ratio	0.443	1.353	0.175	0.98	0	1.961
HCM Control Delay, s/veh	17.3	132	13.9	41.9	10.5	446.6
HCM Lane LOS	C	F	B	E	N	F
HCM 95th-tile Q	1.8	19.4	0.5	8.3	0	61.2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	2	74	0	0	0	0	518	96	262	303	0
Future Volume (vph)	198	2	74	0	0	0	0	518	96	262	303	0
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		220	0		0	0		90	150		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected		0.953								0.950		
Satd. Flow (prot)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1076			2120			2339			645	
Travel Time (s)		13.3			26.3			29.0			8.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	215	2	80	0	0	0	0	563	104	285	329	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	217	80	0	0	0	0	563	104	285	329	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.9%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	38.2
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	198	2	74	0	0	0	0	518	96	262	303	0
Future Vol, veh/h	198	2	74	0	0	0	0	518	96	262	303	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	215	2	80	0	0	0	0	563	104	285	329	0
Number of Lanes	0	1	1	0	0	0	0	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay, s/veh	16.7	65.1	19.5
HCM LOS	C	F	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	0%	99%	0%	100%	0%
Vol Thru, %	100%	0%	1%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	518	96	200	74	262	303
LT Vol	0	0	198	0	262	0
Through Vol	518	0	2	0	0	303
RT Vol	0	96	0	74	0	0
Lane Flow Rate	563	104	217	80	285	329
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	1.04	0.172	0.495	0.156	0.571	0.613
Departure Headway (Hd)	6.647	5.933	8.189	6.963	7.315	6.703
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	541	599	437	512	496	534
Service Time	4.44	3.725	5.984	4.756	5.015	4.503
HCM Lane V/C Ratio	1.041	0.174	0.497	0.156	0.575	0.616
HCM Control Delay, s/veh	75.3	10	18.8	11.1	19.3	19.7
HCM Lane LOS	F	A	C	B	C	C
HCM 95th-tile Q	15.8	0.6	2.7	0.5	3.5	4.1



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	15	24	220	12	22	108
Future Volume (vph)	15	24	220	12	22	108
Ideal Flow (vphpl)	1750	1750	1900	1750	1750	1900
Storage Length (ft)	100	50		50	100	
Storage Lanes	1	0		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1630	1458	1863	1458	1630	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1630	1458	1863	1458	1630	1863
Link Speed (mph)	55		55			55
Link Distance (ft)	739		548			2339
Travel Time (s)	9.2		6.8			29.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	26	239	13	24	117
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	26	239	13	24	117
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.00	1.11	1.11	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Stop			Stop

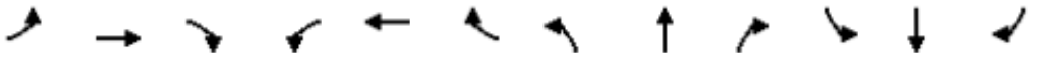
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	28.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	24	220	12	22	108
Future Vol, veh/h	15	24	220	12	22	108
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	26	239	13	24	117
Number of Lanes	1	1	1	1	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay, s/veh	8.1	9.5	8.4
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	0%	100%	0%	100%	0%
Vol Thru, %	100%	0%	0%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	220	12	15	24	22	108
LT Vol	0	0	15	0	22	0
Through Vol	220	0	0	0	0	108
RT Vol	0	12	0	24	0	0
Lane Flow Rate	239	13	16	26	24	117
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	0.311	0.014	0.027	0.035	0.035	0.158
Departure Headway (Hd)	4.677	3.976	5.969	4.764	5.335	4.834
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	758	886	603	755	674	745
Service Time	2.468	1.766	3.676	2.47	3.044	2.542
HCM Lane V/C Ratio	0.315	0.015	0.027	0.034	0.036	0.157
HCM Control Delay, s/veh	9.6	6.8	8.8	7.6	8.2	8.4
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	1.3	0	0.1	0.1	0.1	0.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	116	2	47	105	1	3	1	167	4	1	3
Future Volume (vph)	3	116	2	47	105	1	3	1	167	4	1	3
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	100		50	100		50	100		50	100		50
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1630	1863	1458	1630	1863	1458	1630	1863	1458	1630	1863	1458
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1630	1863	1458	1630	1863	1458	1630	1863	1458	1630	1863	1458
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1360			1533			635			1348	
Travel Time (s)		16.9			19.0			7.9			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	126	2	51	114	1	3	1	182	4	1	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	126	2	51	114	1	3	1	182	4	1	3
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.7%		ICU Level of Service A	
Analysis Period (min) 15			

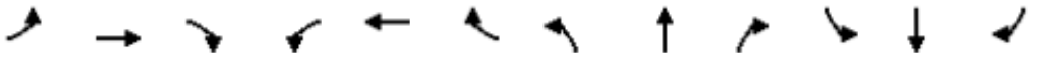
Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	116	2	47	105	1	3	1	167	4	1	3
Future Vol, veh/h	3	116	2	47	105	1	3	1	167	4	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	50	100	-	50	100	-	50	100	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	126	2	51	114	1	3	1	182	4	1	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	165	198	1	82	19	1	4	0	0	183	0	0
Stage 1	9	9	-	7	7	-	-	-	-	-	-	-
Stage 2	156	189	-	75	12	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	800	698	1084	905	875	1084	1618	-	-	1392	-	-
Stage 1	1012	888	-	1015	890	-	-	-	-	-	-	-
Stage 2	846	744	-	934	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	716	695	1084	775	871	1084	1618	-	-	1392	-	-
Mov Cap-2 Maneuver	716	695	-	775	871	-	-	-	-	-	-	-
Stage 1	1010	885	-	1013	888	-	-	-	-	-	-	-
Stage 2	735	743	-	797	883	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	11.2	9.9	0.1	3.8
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1618	-	-	716	695	1084	775	871	1084	1392	-	-
HCM Lane V/C Ratio	0.002	-	-	0.005	0.181	0.002	0.066	0.131	0.001	0.003	-	-
HCM Control Delay (s/veh)	7.2	-	-	10.1	11.3	8.3	10	9.8	8.3	7.6	-	-
HCM Lane LOS	A	-	-	B	B	A	B	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.7	0	0.2	0.5	0	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	69	36	58	79	212	54	287	40	120	266	8
Future Volume (vph)	1	69	36	58	79	212	54	287	40	120	266	8
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.954			0.918			0.986			0.997	
Flt Protected					0.992			0.993			0.985	
Satd. Flow (prot)	0	1777	0	0	1696	0	0	1824	0	0	1829	0
Flt Permitted					0.992			0.993			0.985	
Satd. Flow (perm)	0	1777	0	0	1696	0	0	1824	0	0	1829	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1796			2695			2949			2106	
Travel Time (s)		22.3			33.4			36.6			26.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	75	39	63	86	230	59	312	43	130	289	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	115	0	0	379	0	0	414	0	0	428	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

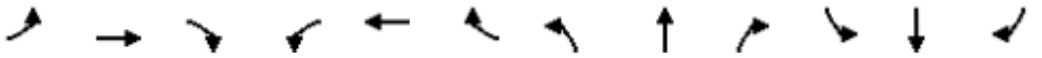
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 73.3%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	27.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	69	36	58	79	212	54	287	40	120	266	8
Future Vol, veh/h	1	69	36	58	79	212	54	287	40	120	266	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	75	39	63	86	230	59	312	43	130	289	9
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	13.5	24.8	29.6	32.8
HCM LOS	B	C	D	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	1%	17%	30%
Vol Thru, %	75%	65%	23%	68%
Vol Right, %	10%	34%	61%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	381	106	349	394
LT Vol	54	1	58	120
Through Vol	287	69	79	266
RT Vol	40	36	212	8
Lane Flow Rate	414	115	379	428
Geometry Grp	1	1	1	1
Degree of Util (X)	0.777	0.251	0.711	0.809
Departure Headway (Hd)	6.758	7.833	6.749	6.799
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	534	456	535	531
Service Time	4.813	5.912	4.802	4.854
HCM Lane V/C Ratio	0.775	0.252	0.708	0.806
HCM Control Delay, s/veh	29.6	13.5	24.8	32.8
HCM Lane LOS	D	B	C	D
HCM 95th-tile Q	7.1	1	5.7	7.8



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	100	57	16	340	25	117	52	20	43	52	53
Future Volume (vph)	37	100	57	16	340	25	117	52	20	43	52	53
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		50	0		140	0		50	0		0
Storage Lanes	0		1	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.952	
Flt Protected		0.987			0.998			0.967			0.986	
Satd. Flow (prot)	0	1839	1458	0	1859	1458	0	1801	1458	0	1749	0
Flt Permitted		0.987			0.998			0.967			0.986	
Satd. Flow (perm)	0	1839	1458	0	1859	1458	0	1801	1458	0	1749	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2695			2169			2270			2002	
Travel Time (s)		33.4			26.9			28.1			24.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	109	62	17	370	27	127	57	22	47	57	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	149	62	0	387	27	0	184	22	0	162	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	100	57	16	340	25	117	52	20	43	52	53
Future Vol, veh/h	37	100	57	16	340	25	117	52	20	43	52	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	109	62	17	370	27	127	57	22	47	57	58
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay, s/veh	11.1	19.3	13.3	12.6
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	69%	0%	27%	0%	4%	0%	29%
Vol Thru, %	31%	0%	73%	0%	96%	0%	35%
Vol Right, %	0%	100%	0%	100%	0%	100%	36%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	169	20	137	57	356	25	148
LT Vol	117	0	37	0	16	0	43
Through Vol	52	0	100	0	340	0	52
RT Vol	0	20	0	57	0	25	53
Lane Flow Rate	184	22	149	62	387	27	161
Geometry Grp	5	5	5	5	5	5	4b
Degree of Util (X)	0.359	0.036	0.273	0.099	0.66	0.041	0.299
Departure Headway (Hd)	7.04	5.976	6.589	5.738	6.14	5.407	6.687
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	509	595	542	620	584	658	534
Service Time	4.824	3.759	4.369	3.516	3.905	3.171	4.775
HCM Lane V/C Ratio	0.361	0.037	0.275	0.1	0.663	0.041	0.301
HCM Control Delay, s/veh	13.8	9	11.9	9.2	20.1	8.4	12.6
HCM Lane LOS	B	A	B	A	C	A	B
HCM 95th-tile Q	1.6	0.1	1.1	0.3	4.9	0.1	1.2



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	108	9	3	99	18	12
Future Volume (vph)	108	9	3	99	18	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.989				0.947	
Flt Protected				0.999	0.971	
Satd. Flow (prot)	1842	0	0	1861	1713	0
Flt Permitted				0.999	0.971	
Satd. Flow (perm)	1842	0	0	1861	1713	0
Link Speed (mph)	55			55	55	
Link Distance (ft)	739			580	300	
Travel Time (s)	9.2			7.2	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	10	3	108	20	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	127	0	0	111	33	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	108	9	3	99	18	12
Future Vol, veh/h	108	9	3	99	18	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	117	10	3	108	20	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	127	0	236	122
Stage 1	-	-	-	-	122	-
Stage 2	-	-	-	-	114	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1459	-	752	929
Stage 1	-	-	-	-	903	-
Stage 2	-	-	-	-	911	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1459	-	750	929
Mov Cap-2 Maneuver	-	-	-	-	750	-
Stage 1	-	-	-	-	903	-
Stage 2	-	-	-	-	909	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.2	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	813	-	-	1459	-
HCM Lane V/C Ratio	0.04	-	-	0.002	-
HCM Control Delay (s/veh)	9.6	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	112	0	1	103	0	1
Future Volume (vph)	112	0	1	103	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	1611	0
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	1611	0
Link Speed (mph)	55			55	55	
Link Distance (ft)	580			1360	308	
Travel Time (s)	7.2			16.9	3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	122	0	1	112	0	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	122	0	0	113	1	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	112	0	1	103	0	1
Future Vol, veh/h	112	0	1	103	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	122	0	1	112	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	122	0	236	122
Stage 1	-	-	-	-	122	-
Stage 2	-	-	-	-	114	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1465	-	752	929
Stage 1	-	-	-	-	903	-
Stage 2	-	-	-	-	911	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1465	-	751	929
Mov Cap-2 Maneuver	-	-	-	-	751	-
Stage 1	-	-	-	-	903	-
Stage 2	-	-	-	-	910	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.1	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	929	-	-	1465	-
HCM Lane V/C Ratio	0.001	-	-	0.001	-
HCM Control Delay (s/veh)	8.9	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	19	291	6	0	138
Future Volume (vph)	0	19	291	6	0	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865	0.997			
Flt Protected						
Satd. Flow (prot)	0	1611	1857	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	1611	1857	0	0	1863
Link Speed (mph)	55		55			55
Link Distance (ft)	2684		2106			548
Travel Time (s)	33.3		26.1			6.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	21	316	7	0	150
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	21	323	0	0	150
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	19	291	6	0	138
Future Vol, veh/h	0	19	291	6	0	138
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	316	7	0	150

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	320	0	0	323	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	0	721	-	-	1237	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	721	-	-	1237	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	10.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	721	1237	-
HCM Lane V/C Ratio	-	-	0.029	-	-
HCM Control Delay (s/veh)	-	-	10.1	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	34	31	11	1	1	12
Future Volume (vph)	34	31	11	1	1	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.935				0.875	
Flt Protected	0.975			0.956		
Satd. Flow (prot)	1698	0	0	1781	1630	0
Flt Permitted	0.975			0.956		
Satd. Flow (perm)	1698	0	0	1781	1630	0
Link Speed (mph)	55			55	55	
Link Distance (ft)	2684			2002	635	
Travel Time (s)	33.3			24.8	7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	34	12	1	1	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	71	0	0	13	14	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	34	31	11	1	1	12
Future Vol, veh/h	34	31	11	1	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	34	12	1	1	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	33	8	14	0	-	0
Stage 1	8	-	-	-	-	-
Stage 2	25	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	980	1074	1604	-	-	-
Stage 1	1015	-	-	-	-	-
Stage 2	998	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	973	1074	1604	-	-	-
Mov Cap-2 Maneuver	973	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	998	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.8	6.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1604	-	1019	-	-
HCM Lane V/C Ratio	0.007	-	0.069	-	-
HCM Control Delay (s/veh)	7.3	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	62	0	401	163	536	0	0	613	277
Future Volume (vph)	0	0	0	62	0	401	163	536	0	0	613	277
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		0	0		350	200		0	80		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850						0.850
Flt Protected					0.950		0.950					
Satd. Flow (prot)	0	0	0	0	1770	1458	1630	1863	0	0	1863	1458
Flt Permitted					0.950		0.345					
Satd. Flow (perm)	0	0	0	0	1770	1458	592	1863	0	0	1863	1458
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						302						301
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1153			2492			645			504	
Travel Time (s)		14.3			30.9			8.0			6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	67	0	436	177	583	0	0	666	301
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	67	436	177	583	0	0	666	301
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	1	1	1	1			1	1
Detector Template												
Leading Detector (ft)				50	50	50	50	50			50	50
Trailing Detector (ft)				0	0	0	0	0			0	0
Detector 1 Position(ft)				0	0	0	0	0			0	0
Detector 1 Size(ft)				50	50	50	50	50			50	50
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases				8		8	2					6
Detector Phase				8	8	8	2	2			6	6
Switch Phase												
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0			4.0	4.0
Minimum Split (s)				24.0	24.0	24.0	24.0	24.0			24.0	24.0
Total Split (s)				31.0	31.0	31.0	59.0	59.0			59.0	59.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)				34.4%	34.4%	34.4%	65.6%	65.6%			65.6%	65.6%
Maximum Green (s)				25.0	25.0	25.0	53.0	53.0			53.0	53.0
Yellow Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0			1.0	1.0
Lost Time Adjust (s)					0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)					6.0	6.0	6.0	6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode				None	None	None	C-Max	C-Max			C-Max	C-Max
Walk Time (s)				7.0	7.0	7.0	7.0	7.0			7.0	7.0
Flash Don't Walk (s)				11.0	11.0	11.0	11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0	0	0	0			0	0
Act Effct Green (s)					15.5	15.5	62.5	62.5			62.5	62.5
Actuated g/C Ratio					0.17	0.17	0.69	0.69			0.69	0.69
v/c Ratio					0.22	0.87	0.43	0.45			0.52	0.27
Control Delay (s/veh)					30.4	29.1	9.8	6.8			9.8	1.7
Queue Delay					0.0	0.0	0.0	0.0			0.0	0.0
Total Delay (s/veh)					30.4	29.1	9.8	6.8			9.8	1.7
LOS					C	C	A	A			A	A
Approach Delay (s/veh)					29.2			7.5			7.3	
Approach LOS					C			A			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay (s/veh): 12.3	Intersection LOS: B
Intersection Capacity Utilization 69.1%	ICU Level of Service C
Analysis Period (min) 15	

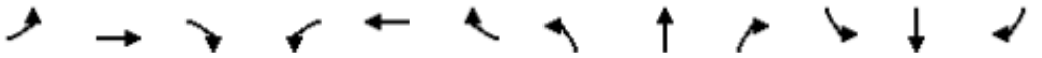
Splits and Phases: 1: Shirk St & SR 198 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	62	0	401	163	536	0	0	613	277
Future Volume (veh/h)	0	0	0	62	0	401	163	536	0	0	613	277
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1750	1863	1716	1716	1863	0	0	1863	1716
Adj Flow Rate, veh/h				67	0	436	177	583	0	0	666	301
Adj No. of Lanes				0	1	1	1	1	0	0	1	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				493	0	405	272	1097	0	0	1097	859
Arrive On Green				0.28	0.00	0.28	1.00	1.00	0.00	0.00	0.59	0.59
Sat Flow, veh/h				1774	0	1458	533	1863	0	0	1863	1458
Grp Volume(v), veh/h				67	0	436	177	583	0	0	666	301
Grp Sat Flow(s),veh/h/ln				1774	0	1458	533	1863	0	0	1863	1458
Q Serve(g_s), s				2.6	0.0	25.0	26.6	0.0	0.0	0.0	20.6	9.6
Cycle Q Clear(g_c), s				2.6	0.0	25.0	47.2	0.0	0.0	0.0	20.6	9.6
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				493	0	405	272	1097	0	0	1097	859
V/C Ratio(X)				0.14	0.00	1.08	0.65	0.53	0.00	0.00	0.61	0.35
Avail Cap(c_a), veh/h				493	0	405	272	1097	0	0	1097	859
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.90	0.90	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.4	0.0	32.5	9.2	0.0	0.0	0.0	11.8	9.6
Incr Delay (d2), s/veh				0.1	0.0	66.6	10.4	1.7	0.0	0.0	2.5	1.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.3	0.0	17.5	4.5	0.5	0.0	0.0	11.3	4.1
LnGrp Delay(d), s/veh				24.5	0.0	99.1	19.6	1.7	0.0	0.0	14.3	10.7
LnGrp LOS				C		F	B	A			B	B
Approach Vol, veh/h					503			760			967	
Approach Delay, s/veh					89.2			5.8			13.2	
Approach LOS					F			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		59.0				59.0		31.0
Change Period (Y+Rc), s		6.0				6.0		6.0
Max Green Setting (Gmax), s		53.0				53.0		25.0
Max Q Clear Time (g_c+I1), s		49.2				22.6		27.0
Green Ext Time (p_c), s		1.6				4.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay, s/veh	27.8
HCM 2010 LOS	C



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	2	74	0	0	0	0	518	96	262	303	0
Future Volume (vph)	198	2	74	0	0	0	0	518	96	262	303	0
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		220	0		0	0		90	150		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected		0.953								0.950		
Satd. Flow (prot)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Flt Permitted		0.953								0.407		
Satd. Flow (perm)	0	1775	1458	0	0	0	0	1863	1458	698	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			80						102			
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1076			2120			2339			645	
Travel Time (s)		13.3			26.3			29.0			8.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	215	2	80	0	0	0	0	563	104	285	329	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	217	80	0	0	0	0	563	104	285	329	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1					1	1	1	1	
Detector Template												
Leading Detector (ft)	50	50	50					50	50	50	50	
Trailing Detector (ft)	0	0	0					0	0	0	0	
Detector 1 Position(ft)	0	0	0					0	0	0	0	
Detector 1 Size(ft)	50	50	50					50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Turn Type	Perm	NA	Perm					NA	Perm	Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4		4						2	6		
Detector Phase	4	4	4					2	2	6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0					24.0	24.0	24.0	24.0	
Total Split (s)	24.0	24.0	24.0					66.0	66.0	66.0	66.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	26.7%	26.7%	26.7%					73.3%	73.3%	73.3%	73.3%	
Maximum Green (s)	18.0	18.0	18.0					60.0	60.0	60.0	60.0	
Yellow Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0	6.0					6.0	6.0	6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0					11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0					0	0	0	0	
Act Effct Green (s)		15.2	15.2					62.8	62.8	62.8	62.8	
Actuated g/C Ratio		0.17	0.17					0.70	0.70	0.70	0.70	
v/c Ratio		0.72	0.26					0.43	0.10	0.59	0.25	
Control Delay (s/veh)		49.2	9.7					8.2	2.1	8.2	2.4	
Queue Delay		0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay (s/veh)		49.2	9.7					8.2	2.1	8.2	2.4	
LOS		D	A					A	A	A	A	
Approach Delay (s/veh)		38.6						7.2			5.1	
Approach LOS		D						A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 12.3		Intersection LOS: B	
Intersection Capacity Utilization 69.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: Shirk St & SR 138 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	198	2	74	0	0	0	0	518	96	262	303	0
Future Volume (veh/h)	198	2	74	0	0	0	0	518	96	262	303	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1750	1863	1716				0	1863	1716	1716	1863	0
Adj Flow Rate, veh/h	215	2	80				0	563	104	285	329	0
Adj No. of Lanes	0	1	1				0	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	258	2	214				0	1342	1050	503	1342	0
Arrive On Green	0.15	0.15	0.15				0.00	0.72	0.72	1.00	1.00	0.00
Sat Flow, veh/h	1758	16	1458				0	1863	1458	706	1863	0
Grp Volume(v), veh/h	217	0	80				0	563	104	285	329	0
Grp Sat Flow(s),veh/h/ln	1775	0	1458				0	1863	1458	706	1863	0
Q Serve(g_s), s	10.7	0.0	4.5				0.0	10.9	1.9	13.9	0.0	0.0
Cycle Q Clear(g_c), s	10.7	0.0	4.5				0.0	10.9	1.9	24.8	0.0	0.0
Prop In Lane	0.99		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	260	0	214				0	1342	1050	503	1342	0
V/C Ratio(X)	0.83	0.00	0.37				0.00	0.42	0.10	0.57	0.25	0.00
Avail Cap(c_a), veh/h	355	0	292				0	1342	1050	503	1342	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.85	0.85	0.00
Uniform Delay (d), s/veh	37.3	0.0	34.7				0.0	5.0	3.8	2.1	0.0	0.0
Incr Delay (d2), s/veh	11.8	0.0	1.1				0.0	1.0	0.2	3.9	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	0.0	1.9				0.0	5.8	0.8	3.0	0.1	0.0
LnGrp Delay(d), s/veh	49.1	0.0	35.8				0.0	6.0	4.0	6.0	0.4	0.0
LnGrp LOS	D		D					A	A	A	A	
Approach Vol, veh/h		297						667			614	
Approach Delay, s/veh		45.5						5.7			3.0	
Approach LOS		D						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		70.8		19.2		70.8		
Change Period (Y+Rc), s		6.0		6.0		6.0		
Max Green Setting (Gmax), s		60.0		18.0		60.0		
Max Q Clear Time (g_c+I1), s		12.9		12.7		26.8		
Green Ext Time (p_c), s		2.7		0.5		4.0		

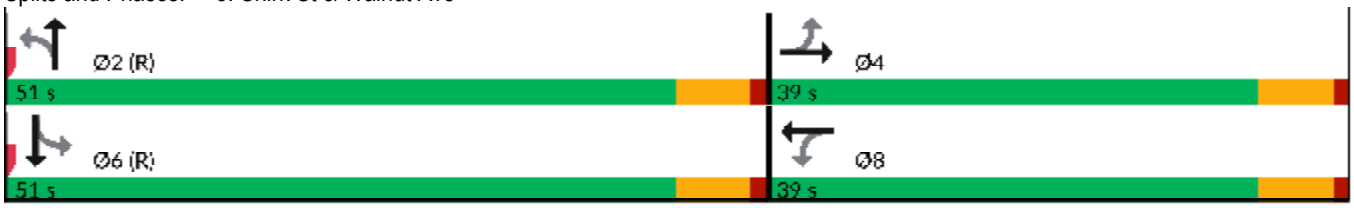
Intersection Summary	
HCM 2010 Ctrl Delay, s/veh	12.1
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	69	36	58	79	212	54	287	40	120	266	8
Future Volume (vph)	1	69	36	58	79	212	54	287	40	120	266	8
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.954			0.918			0.986			0.997	
Flt Protected					0.992			0.993			0.985	
Satd. Flow (prot)	0	1777	0	0	1696	0	0	1824	0	0	1829	0
Flt Permitted		0.997			0.928			0.892			0.771	
Satd. Flow (perm)	0	1772	0	0	1587	0	0	1638	0	0	1432	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			97			9			2	
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1796			2695			2949			2654	
Travel Time (s)		22.3			33.4			36.6			32.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	75	39	63	86	230	59	312	43	130	289	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	115	0	0	379	0	0	414	0	0	428	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	50	50		50	50		50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	39.0	39.0		39.0	39.0		51.0	51.0		51.0	51.0	
Total Split (%)	43.3%	43.3%		43.3%	43.3%		56.7%	56.7%		56.7%	56.7%	
Maximum Green (s)	33.0	33.0		33.0	33.0		45.0	45.0		45.0	45.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		22.4			22.4			55.6			55.6	
Actuated g/C Ratio		0.25			0.25			0.62			0.62	
v/c Ratio		0.25			0.81			0.41			0.48	
Control Delay (s/veh)		18.7			36.6			11.6			13.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		18.7			36.6			11.6			13.5	
LOS		B			D			B			B	
Approach Delay (s/veh)		18.7			36.6			11.6			13.5	
Approach LOS		B			D			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay (s/veh): 19.9		Intersection LOS: B	
Intersection Capacity Utilization 76.6%		ICU Level of Service D	
Analysis Period (min) 15			

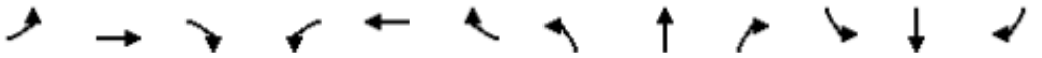
Splits and Phases: 5: Shirk St & Walnut Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	69	36	58	79	212	54	287	40	120	266	8
Future Volume (veh/h)	1	69	36	58	79	212	54	287	40	120	266	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1750	1863	1750	1750	1863	1750	1750	1863	1750	1750	1863	1750
Adj Flow Rate, veh/h	1	75	39	63	86	230	59	312	43	130	289	9
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	41	305	157	99	113	255	157	807	106	304	652	19
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	3	1160	597	200	428	970	185	1336	176	417	1080	32
Grp Volume(v), veh/h	115	0	0	379	0	0	414	0	0	428	0	0
Grp Sat Flow(s),veh/h/ln	1760	0	0	1599	0	0	1698	0	0	1529	0	0
Q Serve(g_s), s	0.0	0.0	0.0	15.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0
Cycle Q Clear(g_c), s	4.6	0.0	0.0	20.5	0.0	0.0	10.4	0.0	0.0	12.2	0.0	0.0
Prop In Lane	0.01		0.34	0.17		0.61	0.14		0.10	0.30		0.02
Lane Grp Cap(c), veh/h	503	0	0	467	0	0	1071	0	0	975	0	0
V/C Ratio(X)	0.23	0.00	0.00	0.81	0.00	0.00	0.39	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	684	0	0	630	0	0	1071	0	0	975	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	26.2	0.0	0.0	31.9	0.0	0.0	9.1	0.0	0.0	9.3	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	5.8	0.0	0.0	1.1	0.0	0.0	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0	9.8	0.0	0.0	5.5	0.0	0.0	6.0	0.0	0.0
LnGrp Delay(d), s/veh	26.4	0.0	0.0	37.7	0.0	0.0	10.2	0.0	0.0	10.8	0.0	0.0
LnGrp LOS	C			D			B			B		
Approach Vol, veh/h		115			379			414			428	
Approach Delay, s/veh		26.4			37.7			10.2			10.8	
Approach LOS		C			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		60.3		29.7		60.3		29.7
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		45.0		33.0		45.0		33.0
Max Q Clear Time (g_c+I1), s		12.4		6.6		14.2		22.5
Green Ext Time (p_c), s		1.6		0.3		1.8		1.1

Intersection Summary	
HCM 2010 Ctrl Delay, s/veh	19.6
HCM 2010 LOS	B



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	61	4	205	83	404	0	0	549	142
Future Volume (vph)	0	0	0	61	4	205	83	404	0	0	549	142
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		0	0		350	200		0	80		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850						0.850
Flt Protected					0.955		0.950					
Satd. Flow (prot)	0	0	0	0	1779	1458	1630	1863	0	0	1863	1458
Flt Permitted					0.955		0.950					
Satd. Flow (perm)	0	0	0	0	1779	1458	1630	1863	0	0	1863	1458
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1153			2492			645			504	
Travel Time (s)		14.3			30.9			8.0			6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	66	4	223	90	439	0	0	597	154
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	70	223	90	439	0	0	597	154
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

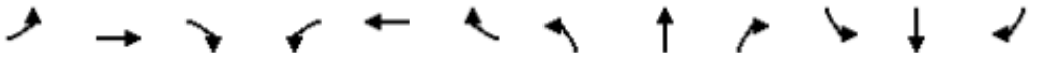
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.8%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	43
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	61	4	205	83	404	0	0	549	142
Future Vol, veh/h	0	0	0	61	4	205	83	404	0	0	549	142
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	66	4	223	90	439	0	0	597	154
Number of Lanes	0	0	0	0	1	1	1	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay, s/veh	14.2	27.5	65.2
HCM LOS	B	D	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	94%	0%	0%	0%
Vol Thru, %	0%	100%	6%	0%	100%	0%
Vol Right, %	0%	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	83	404	65	205	549	142
LT Vol	83	0	61	0	0	0
Through Vol	0	404	4	0	549	0
RT Vol	0	0	0	205	0	142
Lane Flow Rate	90	439	71	223	597	154
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	0.176	0.797	0.157	0.423	1.059	0.243
Departure Headway (Hd)	7.224	6.713	8.231	7.029	6.389	5.675
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	500	545	439	515	567	631
Service Time	4.924	4.413	5.931	4.729	4.138	3.424
HCM Lane V/C Ratio	0.18	0.806	0.162	0.433	1.053	0.244
HCM Control Delay, s/veh	11.5	30.8	12.5	14.8	79.4	10.3
HCM Lane LOS	B	D	B	B	F	B
HCM 95th-tile Q	0.6	7.6	0.6	2.1	17.1	0.9



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	4	155	0	0	0	0	256	40	341	271	0
Future Volume (vph)	228	4	155	0	0	0	0	256	40	341	271	0
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		220	0		0	0		90	150		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected		0.953								0.950		
Satd. Flow (prot)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1076			2120			4993			645	
Travel Time (s)		13.3			26.3			61.9			8.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	248	4	168	0	0	0	0	278	43	371	295	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	252	168	0	0	0	0	278	43	371	295	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

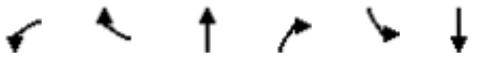
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.8%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	18.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	228	4	155	0	0	0	0	256	40	341	271	0
Future Vol, veh/h	228	4	155	0	0	0	0	256	40	341	271	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	248	4	168	0	0	0	0	278	43	371	295	0
Number of Lanes	0	1	1	0	0	0	0	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay, s/veh	16.1	16.7	21.8
HCM LOS	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	0%	98%	0%	100%	0%
Vol Thru, %	100%	0%	2%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	256	40	232	155	341	271
LT Vol	0	0	228	0	341	0
Through Vol	256	0	4	0	0	271
RT Vol	0	40	0	155	0	0
Lane Flow Rate	278	43	252	168	371	295
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	0.541	0.076	0.534	0.3	0.721	0.531
Departure Headway (Hd)	6.994	6.277	7.627	6.415	7.004	6.494
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	512	567	472	558	515	554
Service Time	4.777	4.06	5.401	4.187	4.775	4.264
HCM Lane V/C Ratio	0.543	0.076	0.534	0.301	0.72	0.532
HCM Control Delay, s/veh	17.8	9.6	18.9	11.9	26	16.5
HCM Lane LOS	C	A	C	B	D	C
HCM 95th-tile Q	3.2	0.2	3.1	1.3	5.8	3.1



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	108	9	2	61	7	4
Future Volume (vph)	108	9	2	61	7	4
Ideal Flow (vphpl)	1750	1750	1900	1750	1750	1900
Storage Length (ft)	100	50		50	100	
Storage Lanes	1	0		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1630	1458	1863	1458	1630	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1630	1458	1863	1458	1630	1863
Link Speed (mph)	55		55			55
Link Distance (ft)	1533		2637			1348
Travel Time (s)	19.0		32.7			16.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	10	2	66	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	10	2	66	8	4
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.00	1.11	1.11	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	19.5%	ICU Level of Service	A
Analysis Period (min)	15		

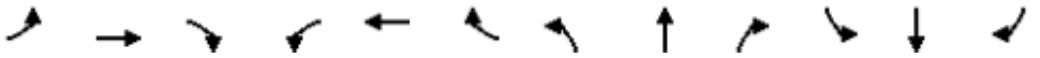
Intersection	
Int Delay, s/veh	5.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	108	9	2	61	7	4
Future Vol, veh/h	108	9	2	61	7	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	50	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	117	10	2	66	8	4

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	22	2	0	0	68	0
Stage 1	2	-	-	-	-	-
Stage 2	20	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	995	1082	-	-	1533	-
Stage 1	1021	-	-	-	-	-
Stage 2	1003	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	990	1082	-	-	1533	-
Mov Cap-2 Maneuver	990	-	-	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	998	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9	0	4.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	990	1082	1533	-
HCM Lane V/C Ratio	-	-	0.119	0.009	0.005	-
HCM Control Delay (s/veh)	-	-	9.1	8.4	7.4	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	130	65	35	69	119	34	158	46	232	191	9
Future Volume (vph)	13	130	65	35	69	119	34	158	46	232	191	9
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.958			0.928			0.974			0.997	
Flt Protected		0.997			0.992			0.993			0.974	
Satd. Flow (prot)	0	1779	0	0	1715	0	0	1802	0	0	1809	0
Flt Permitted		0.997			0.992			0.993			0.974	
Satd. Flow (perm)	0	1779	0	0	1715	0	0	1802	0	0	1809	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1796			2695			2949			4993	
Travel Time (s)		22.3			33.4			36.6			61.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	141	71	38	75	129	37	172	50	252	208	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	226	0	0	242	0	0	259	0	0	470	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

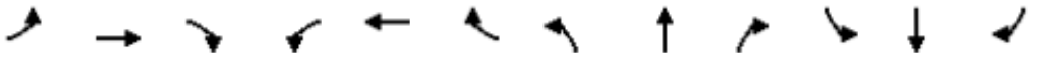
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 69.6%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	20.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	130	65	35	69	119	34	158	46	232	191	9
Future Vol, veh/h	13	130	65	35	69	119	34	158	46	232	191	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	141	71	38	75	129	37	172	50	252	208	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	14.5	14.7	15	29.9
HCM LOS	B	B	B	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	6%	16%	54%
Vol Thru, %	66%	63%	31%	44%
Vol Right, %	19%	31%	53%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	238	208	223	432
LT Vol	34	13	35	232
Through Vol	158	130	69	191
RT Vol	46	65	119	9
Lane Flow Rate	259	226	242	470
Geometry Grp	1	1	1	1
Degree of Util (X)	0.462	0.419	0.439	0.804
Departure Headway (Hd)	6.434	6.664	6.515	6.162
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	556	538	550	587
Service Time	4.512	4.744	4.593	4.225
HCM Lane V/C Ratio	0.466	0.42	0.44	0.801
HCM Control Delay, s/veh	15	14.5	14.7	29.9
HCM Lane LOS	B	B	B	D
HCM 95th-tile Q	2.4	2.1	2.2	7.9



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	241	120	15	124	29	62	38	12	18	34	55
Future Volume (vph)	47	241	120	15	124	29	62	38	12	18	34	55
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		50	0		140	0		50	0		0
Storage Lanes	0		1	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.931	
Flt Protected		0.992			0.995			0.970			0.992	
Satd. Flow (prot)	0	1848	1458	0	1853	1458	0	1807	1458	0	1720	0
Flt Permitted		0.992			0.995			0.970			0.992	
Satd. Flow (perm)	0	1848	1458	0	1853	1458	0	1807	1458	0	1720	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2695			2169			2270			2637	
Travel Time (s)		33.4			26.9			28.1			32.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	262	130	16	135	32	67	41	13	20	37	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	313	130	0	151	32	0	108	13	0	117	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

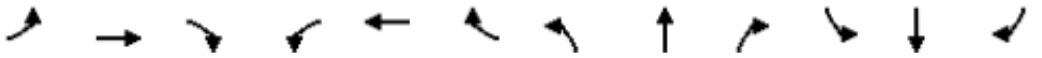
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	47	241	120	15	124	29	62	38	12	18	34	55
Future Vol, veh/h	47	241	120	15	124	29	62	38	12	18	34	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	262	130	16	135	32	67	41	13	20	37	60
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay, s/veh	12.1	10.2	10.8	10.6
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	62%	0%	16%	0%	11%	0%	17%
Vol Thru, %	38%	0%	84%	0%	89%	0%	32%
Vol Right, %	0%	100%	0%	100%	0%	100%	51%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	100	12	288	120	139	29	107
LT Vol	62	0	47	0	15	0	18
Through Vol	38	0	241	0	124	0	34
RT Vol	0	12	0	120	0	29	55
Lane Flow Rate	109	13	313	130	151	32	116
Geometry Grp	5	5	5	5	5	5	4b
Degree of Util (X)	0.201	0.02	0.489	0.176	0.248	0.045	0.196
Departure Headway (Hd)	6.656	5.633	5.626	4.858	5.905	5.141	6.082
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	540	636	642	743	609	697	591
Service Time	4.389	3.366	3.347	2.558	3.632	2.869	4.113
HCM Lane V/C Ratio	0.202	0.02	0.488	0.175	0.248	0.046	0.196
HCM Control Delay, s/veh	11.1	8.5	13.6	8.6	10.6	8.1	10.6
HCM Lane LOS	B	A	B	A	B	A	B
HCM 95th-tile Q	0.7	0.1	2.7	0.6	1	0.1	0.7



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	67	5	224	92	499	0	0	714	163
Future Volume (vph)	0	0	0	67	5	224	92	499	0	0	714	163
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		0	0		350	200		0	80		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850						0.850
Flt Protected					0.955		0.950					
Satd. Flow (prot)	0	0	0	0	1779	1458	1630	1863	0	0	1863	1458
Flt Permitted					0.955		0.950					
Satd. Flow (perm)	0	0	0	0	1779	1458	1630	1863	0	0	1863	1458
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1153			2492			645			504	
Travel Time (s)		14.3			30.9			8.0			6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	73	5	243	100	542	0	0	776	177
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	78	243	100	542	0	0	776	177
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

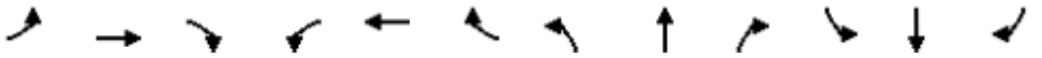
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.8%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	118.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	67	5	224	92	499	0	0	714	163
Future Vol, veh/h	0	0	0	67	5	224	92	499	0	0	714	163
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	73	5	243	100	542	0	0	776	177
Number of Lanes	0	0	0	0	1	1	1	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay, s/veh	16.3	61.1	192
HCM LOS	C	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	93%	0%	0%	0%
Vol Thru, %	0%	100%	7%	0%	100%	0%
Vol Right, %	0%	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	92	499	72	224	714	163
LT Vol	92	0	67	0	0	0
Through Vol	0	499	5	0	714	0
RT Vol	0	0	0	224	0	163
Lane Flow Rate	100	542	78	243	776	177
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	0.2	1.012	0.179	0.478	1.453	0.297
Departure Headway (Hd)	7.755	7.241	8.861	7.651	6.742	6.026
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	466	504	408	475	543	595
Service Time	5.455	4.941	6.561	5.351	4.496	3.779
HCM Lane V/C Ratio	0.215	1.075	0.191	0.512	1.429	0.297
HCM Control Delay, s/veh	12.4	70.1	13.5	17.2	233.2	11.3
HCM Lane LOS	B	F	B	C	F	B
HCM 95th-tile Q	0.7	14.1	0.6	2.5	37.7	1.2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	239	4	163	0	0	0	0	334	46	379	335	0
Future Volume (vph)	239	4	163	0	0	0	0	334	46	379	335	0
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		220	0		0	0		90	150		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected		0.953								0.950		
Satd. Flow (prot)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1076			2120			2339			645	
Travel Time (s)		13.3			26.3			29.0			8.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	260	4	177	0	0	0	0	363	50	412	364	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	264	177	0	0	0	0	363	50	412	364	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

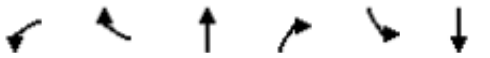
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.8%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	27.2
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	239	4	163	0	0	0	0	334	46	379	335	0
Future Vol, veh/h	239	4	163	0	0	0	0	334	46	379	335	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	260	4	177	0	0	0	0	363	50	412	364	0
Number of Lanes	0	1	1	0	0	0	0	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay, s/veh	18.4	26.9	32.4
HCM LOS	C	D	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	0%	98%	0%	100%	0%
Vol Thru, %	100%	0%	2%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	334	46	243	163	379	335
LT Vol	0	0	239	0	379	0
Through Vol	334	0	4	0	0	335
RT Vol	0	46	0	163	0	0
Lane Flow Rate	363	50	264	177	412	364
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	0.749	0.093	0.59	0.336	0.851	0.7
Departure Headway (Hd)	7.432	6.713	8.163	6.942	7.433	6.921
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	490	536	444	521	490	524
Service Time	5.15	4.431	5.863	4.642	5.133	4.621
HCM Lane V/C Ratio	0.741	0.093	0.595	0.34	0.841	0.695
HCM Control Delay, s/veh	29.2	10.1	21.9	13.1	39.6	24.2
HCM Lane LOS	D	B	C	B	E	C
HCM 95th-tile Q	6.3	0.3	3.7	1.5	8.7	5.5



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	15	20	290	12	18	426
Future Volume (vph)	15	20	290	12	18	426
Ideal Flow (vphpl)	1750	1750	1900	1750	1750	1900
Storage Length (ft)	100	50		50	100	
Storage Lanes	1	0		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1630	1458	1863	1458	1630	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1630	1458	1863	1458	1630	1863
Link Speed (mph)	55		55			55
Link Distance (ft)	2679		2654			2339
Travel Time (s)	33.2		32.9			29.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	22	315	13	20	463
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	22	315	13	20	463
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.00	1.11	1.11	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

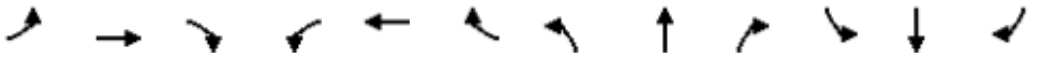
Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	20	290	12	18	426
Future Vol, veh/h	15	20	290	12	18	426
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	50	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	22	315	13	20	463

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	818	315	0	0	328	0
Stage 1	315	-	-	-	-	-
Stage 2	503	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	346	725	-	-	1232	-
Stage 1	740	-	-	-	-	-
Stage 2	607	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	340	725	-	-	1232	-
Mov Cap-2 Maneuver	340	-	-	-	-	-
Stage 1	740	-	-	-	-	-
Stage 2	597	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.7	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	340	725	1232	-
HCM Lane V/C Ratio	-	-	0.048	0.03	0.016	-
HCM Control Delay (s/veh)	-	-	16.1	10.1	8	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	81	2	116	83	10	3	2	67	8	5	2
Future Volume (vph)	4	81	2	116	83	10	3	2	67	8	5	2
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	100		50	100		50	100		50	100		50
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1630	1863	1458	1630	1863	1458	1630	1863	1458	1630	1863	1458
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1630	1863	1458	1630	1863	1458	1630	1863	1458	1630	1863	1458
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2679			1533			2637			1348	
Travel Time (s)		33.2			19.0			32.7			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	88	2	126	90	11	3	2	73	9	5	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	88	2	126	90	11	3	2	73	9	5	2
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.5%		ICU Level of Service A	
Analysis Period (min) 15			

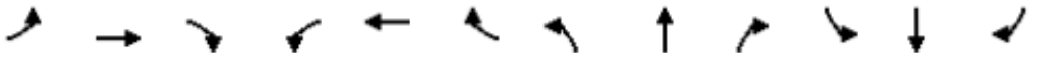
Intersection	
Int Delay, s/veh	7.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	81	2	116	83	10	3	2	67	8	5	2
Future Vol, veh/h	4	81	2	116	83	10	3	2	67	8	5	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	50	100	-	50	100	-	50	100	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	88	2	126	90	11	3	2	73	9	5	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	118	104	5	77	33	2	7	0	0	75	0	0
Stage 1	23	23	-	8	8	-	-	-	-	-	-	-
Stage 2	95	81	-	69	25	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	858	786	1078	912	860	1082	1614	-	-	1524	-	-
Stage 1	995	876	-	1013	889	-	-	-	-	-	-	-
Stage 2	912	828	-	941	874	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	776	780	1078	826	853	1082	1614	-	-	1524	-	-
Mov Cap-2 Maneuver	776	780	-	826	853	-	-	-	-	-	-	-
Stage 1	993	871	-	1011	887	-	-	-	-	-	-	-
Stage 2	810	826	-	839	869	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	10.1	9.9	0.3	3.9
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1614	-	-	776	780	1078	826	853	1082	1524	-	-
HCM Lane V/C Ratio	0.002	-	-	0.006	0.113	0.002	0.153	0.106	0.01	0.006	-	-
HCM Control Delay (s/veh)	7.2	-	-	9.7	10.2	8.3	10.1	9.7	8.4	7.4	-	-
HCM Lane LOS	A	-	-	A	B	A	B	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.4	0	0.5	0.4	0	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	156	71	36	71	122	38	202	52	262	244	10
Future Volume (vph)	14	156	71	36	71	122	38	202	52	262	244	10
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.960			0.928			0.976			0.997	
Flt Protected		0.997			0.992			0.994			0.975	
Satd. Flow (prot)	0	1783	0	0	1715	0	0	1807	0	0	1811	0
Flt Permitted		0.997			0.992			0.994			0.975	
Satd. Flow (perm)	0	1783	0	0	1715	0	0	1807	0	0	1811	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1796			2695			2949			2654	
Travel Time (s)		22.3			33.4			36.6			32.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	170	77	39	77	133	41	220	57	285	265	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	262	0	0	249	0	0	318	0	0	561	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

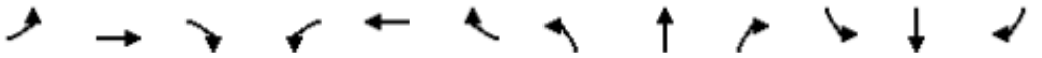
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 78.2%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	44.7
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	156	71	36	71	122	38	202	52	262	244	10
Future Vol, veh/h	14	156	71	36	71	122	38	202	52	262	244	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	170	77	39	77	133	41	220	57	285	265	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	19.4	18.3	21.8	81.3
HCM LOS	C	C	C	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	6%	16%	51%
Vol Thru, %	69%	65%	31%	47%
Vol Right, %	18%	29%	53%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	292	241	229	516
LT Vol	38	14	36	262
Through Vol	202	156	71	244
RT Vol	52	71	122	10
Lane Flow Rate	317	262	249	561
Geometry Grp	1	1	1	1
Degree of Util (X)	0.625	0.54	0.509	1.057
Departure Headway (Hd)	7.36	7.724	7.665	6.783
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	495	469	473	533
Service Time	5.36	5.724	5.665	4.865
HCM Lane V/C Ratio	0.64	0.559	0.526	1.053
HCM Control Delay, s/veh	21.8	19.4	18.3	81.3
HCM Lane LOS	C	C	C	F
HCM 95th-tile Q	4.2	3.2	2.8	16.4



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	247	123	18	176	35	67	44	13	19	39	59
Future Volume (vph)	48	247	123	18	176	35	67	44	13	19	39	59
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		50	0		140	0		50	0		0
Storage Lanes	0		1	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.932	
Flt Protected		0.992			0.995			0.971			0.992	
Satd. Flow (prot)	0	1848	1458	0	1853	1458	0	1809	1458	0	1722	0
Flt Permitted		0.992			0.995			0.971			0.992	
Satd. Flow (perm)	0	1848	1458	0	1853	1458	0	1809	1458	0	1722	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2695			2169			2270			2637	
Travel Time (s)		33.4			26.9			28.1			32.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	268	134	20	191	38	73	48	14	21	42	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	320	134	0	211	38	0	121	14	0	127	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

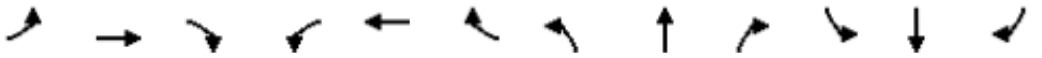
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	247	123	18	176	35	67	44	13	19	39	59
Future Vol, veh/h	48	247	123	18	176	35	67	44	13	19	39	59
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	52	268	134	20	191	38	73	48	14	21	42	64
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay, s/veh	13.1	11.5	11.5	11.3
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	60%	0%	16%	0%	9%	0%	16%
Vol Thru, %	40%	0%	84%	0%	91%	0%	33%
Vol Right, %	0%	100%	0%	100%	0%	100%	50%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	111	13	295	123	194	35	117
LT Vol	67	0	48	0	18	0	19
Through Vol	44	0	247	0	176	0	39
RT Vol	0	13	0	123	0	35	59
Lane Flow Rate	121	14	321	134	211	38	127
Geometry Grp	5	5	5	5	5	5	4b
Degree of Util (X)	0.232	0.023	0.52	0.187	0.355	0.056	0.225
Departure Headway (Hd)	6.917	5.899	5.838	5.047	6.053	5.296	6.367
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	519	605	619	710	593	675	562
Service Time	4.67	3.652	3.577	2.786	3.798	3.04	4.419
HCM Lane V/C Ratio	0.233	0.023	0.519	0.189	0.356	0.056	0.226
HCM Control Delay, s/veh	11.8	8.8	14.8	9	12.1	8.4	11.3
HCM Lane LOS	B	A	B	A	B	A	B
HCM 95th-tile Q	0.9	0.1	3	0.7	1.6	0.2	0.9



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	72	5	224	92	502	0	0	723	163
Future Volume (vph)	0	0	0	72	5	224	92	502	0	0	723	163
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		0	0		350	200		0	80		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850					0.972	
Flt Protected					0.955		0.950					
Satd. Flow (prot)	0	0	0	0	1779	1458	1630	1863	0	1716	1811	0
Flt Permitted					0.955		0.950					
Satd. Flow (perm)	0	0	0	0	1779	1458	1630	1863	0	1716	1811	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1153			2492			645			504	
Travel Time (s)		14.3			30.9			8.0			6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	78	5	243	100	546	0	0	786	177
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	83	243	100	546	0	0	963	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

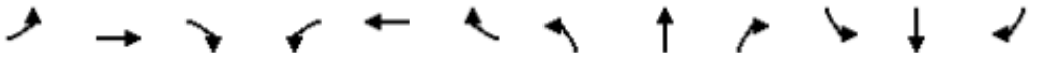
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	204.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	72	5	224	92	502	0	0	723	163
Future Vol, veh/h	0	0	0	72	5	224	92	502	0	0	723	163
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	78	5	243	100	546	0	0	786	177
Number of Lanes	0	0	0	0	1	1	1	1	0	1	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay, s/veh	16.7	56.3	368.3
HCM LOS	C	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	94%	0%	0%	0%
Vol Thru, %	0%	100%	6%	0%	100%	82%
Vol Right, %	0%	0%	0%	100%	0%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	92	502	77	224	0	886
LT Vol	92	0	72	0	0	0
Through Vol	0	502	5	0	0	723
RT Vol	0	0	0	224	0	163
Lane Flow Rate	100	546	84	243	0	963
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	0.195	0.987	0.188	0.469	0	1.765
Departure Headway (Hd)	7.855	7.338	9.214	7.992	6.73	6.599
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	460	497	392	455	0	559
Service Time	5.555	5.038	6.914	5.692	4.465	4.333
HCM Lane V/C Ratio	0.217	1.099	0.214	0.534	0	1.723
HCM Control Delay, s/veh	12.4	64.3	14	17.6	9.5	368.3
HCM Lane LOS	B	F	B	C	N	F
HCM 95th-tile Q	0.7	13.1	0.7	2.4	0	58.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	239	4	163	0	0	0	0	337	51	379	349	0
Future Volume (vph)	239	4	163	0	0	0	0	337	51	379	349	0
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		220	0		0	0		90	150		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected		0.953								0.950		
Satd. Flow (prot)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1076			2120			2339			645	
Travel Time (s)		13.3			26.3			29.0			8.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	260	4	177	0	0	0	0	366	55	412	379	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	264	177	0	0	0	0	366	55	412	379	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	28.1
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	239	4	163	0	0	0	0	337	51	379	349	0
Future Vol, veh/h	239	4	163	0	0	0	0	337	51	379	349	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	260	4	177	0	0	0	0	366	55	412	379	0
Number of Lanes	0	1	1	0	0	0	0	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay, s/veh	18.8	27.6	33.6
HCM LOS	C	D	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	0%	98%	0%	100%	0%
Vol Thru, %	100%	0%	2%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	337	51	243	163	379	349
LT Vol	0	0	239	0	379	0
Through Vol	337	0	4	0	0	349
RT Vol	0	51	0	163	0	0
Lane Flow Rate	366	55	264	177	412	379
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	0.76	0.104	0.601	0.343	0.854	0.732
Departure Headway (Hd)	7.465	6.746	8.188	6.967	7.46	6.947
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	484	532	444	519	486	523
Service Time	5.203	4.483	5.903	4.682	5.18	4.668
HCM Lane V/C Ratio	0.756	0.103	0.595	0.341	0.848	0.725
HCM Control Delay, s/veh	30.2	10.3	22.5	13.3	40.2	26.4
HCM Lane LOS	D	B	C	B	E	D
HCM 95th-tile Q	6.5	0.3	3.8	1.5	8.8	6.1



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	17	23	292	15	32	426
Future Volume (vph)	17	23	292	15	32	426
Ideal Flow (vphpl)	1750	1750	1900	1750	1750	1900
Storage Length (ft)	100	50		50	100	
Storage Lanes	1	0		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1630	1458	1863	1458	1630	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1630	1458	1863	1458	1630	1863
Link Speed (mph)	55		55			55
Link Distance (ft)	739		548			2339
Travel Time (s)	9.2		6.8			29.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	25	317	16	35	463
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	25	317	16	35	463
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.00	1.11	1.11	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Stop			Stop

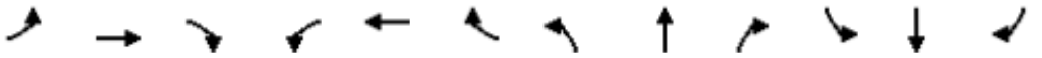
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	13.6
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	23	292	15	32	426
Future Vol, veh/h	17	23	292	15	32	426
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	25	317	16	35	463
Number of Lanes	1	1	1	1	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay, s/veh	9.3	11.7	15.3
HCM LOS	A	B	C

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	0%	100%	0%	100%	0%
Vol Thru, %	100%	0%	0%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	292	15	17	23	32	426
LT Vol	0	0	17	0	32	0
Through Vol	292	0	0	0	0	426
RT Vol	0	15	0	23	0	0
Lane Flow Rate	317	16	18	25	35	463
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	0.447	0.02	0.036	0.04	0.052	0.634
Departure Headway (Hd)	5.068	4.364	6.944	5.729	5.432	4.93
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	711	820	514	622	660	732
Service Time	2.797	2.093	4.706	3.491	3.16	2.657
HCM Lane V/C Ratio	0.446	0.02	0.035	0.04	0.053	0.633
HCM Control Delay, s/veh	11.9	7.2	10	8.7	8.5	15.8
HCM Lane LOS	B	A	A	A	A	C
HCM 95th-tile Q	2.3	0.1	0.1	0.1	0.2	4.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	84	2	123	83	10	3	2	76	8	5	2
Future Volume (vph)	4	84	2	123	83	10	3	2	76	8	5	2
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	100		50	100		50	100		50	100		50
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1630	1863	1458	1630	1863	1458	1630	1863	1458	1630	1863	1458
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1630	1863	1458	1630	1863	1458	1630	1863	1458	1630	1863	1458
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1360			1533			635			1348	
Travel Time (s)		16.9			19.0			7.9			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	91	2	134	90	11	3	2	83	9	5	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	91	2	134	90	11	3	2	83	9	5	2
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.9%		ICU Level of Service A	
Analysis Period (min) 15			

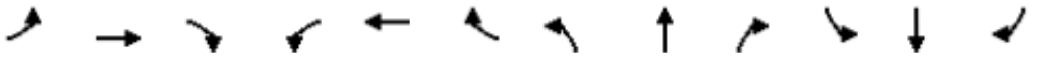
Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	84	2	123	83	10	3	2	76	8	5	2
Future Vol, veh/h	4	84	2	123	83	10	3	2	76	8	5	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	50	100	-	50	100	-	50	100	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	91	2	134	90	11	3	2	83	9	5	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	123	114	5	79	33	2	7	0	0	85	0	0
Stage 1	23	23	-	8	8	-	-	-	-	-	-	-
Stage 2	100	91	-	71	25	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	852	776	1078	910	860	1082	1614	-	-	1512	-	-
Stage 1	995	876	-	1013	889	-	-	-	-	-	-	-
Stage 2	906	820	-	939	874	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	770	770	1078	821	853	1082	1614	-	-	1512	-	-
Mov Cap-2 Maneuver	770	770	-	821	853	-	-	-	-	-	-	-
Stage 1	993	871	-	1011	887	-	-	-	-	-	-	-
Stage 2	804	818	-	834	869	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	10.2	9.9	0.3	3.9
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1614	-	-	770	770	1078	821	853	1082	1512	-	-
HCM Lane V/C Ratio	0.002	-	-	0.006	0.119	0.002	0.163	0.106	0.01	0.006	-	-
HCM Control Delay (s/veh)	7.2	-	-	9.7	10.3	8.3	10.2	9.7	8.4	7.4	-	-
HCM Lane LOS	A	-	-	A	B	A	B	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.4	0	0.6	0.4	0	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	156	71	36	71	124	38	206	52	265	251	10
Future Volume (vph)	14	156	71	36	71	124	38	206	52	265	251	10
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.960			0.927			0.976			0.997	
Flt Protected		0.997			0.992			0.994			0.975	
Satd. Flow (prot)	0	1783	0	0	1713	0	0	1807	0	0	1811	0
Flt Permitted		0.997			0.992			0.994			0.975	
Satd. Flow (perm)	0	1783	0	0	1713	0	0	1807	0	0	1811	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1796			2695			2949			2106	
Travel Time (s)		22.3			33.4			36.6			26.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	170	77	39	77	135	41	224	57	288	273	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	262	0	0	251	0	0	322	0	0	572	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

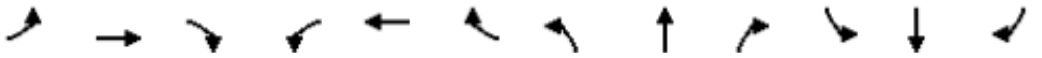
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 79.1%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	49
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	156	71	36	71	124	38	206	52	265	251	10
Future Vol, veh/h	14	156	71	36	71	124	38	206	52	265	251	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	170	77	39	77	135	41	224	57	288	273	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	19.7	18.7	22.6	90.5
HCM LOS	C	C	C	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	6%	16%	50%
Vol Thru, %	70%	65%	31%	48%
Vol Right, %	18%	29%	54%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	296	241	231	526
LT Vol	38	14	36	265
Through Vol	206	156	71	251
RT Vol	52	71	124	10
Lane Flow Rate	322	262	251	572
Geometry Grp	1	1	1	1
Degree of Util (X)	0.637	0.543	0.516	1.086
Departure Headway (Hd)	7.433	7.823	7.753	6.837
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	489	464	467	532
Service Time	5.433	5.823	5.753	4.905
HCM Lane V/C Ratio	0.658	0.565	0.537	1.075
HCM Control Delay, s/veh	22.6	19.7	18.7	90.5
HCM Lane LOS	C	C	C	F
HCM 95th-tile Q	4.4	3.2	2.9	17.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	250	123	18	178	35	67	45	13	23	43	59
Future Volume (vph)	48	250	123	18	178	35	67	45	13	23	43	59
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		50	0		140	0		50	0		0
Storage Lanes	0		1	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.936	
Flt Protected		0.992			0.995			0.971			0.991	
Satd. Flow (prot)	0	1848	1458	0	1853	1458	0	1809	1458	0	1728	0
Flt Permitted		0.992			0.995			0.971			0.991	
Satd. Flow (perm)	0	1848	1458	0	1853	1458	0	1809	1458	0	1728	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2695			2169			2270			2002	
Travel Time (s)		33.4			26.9			28.1			24.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	272	134	20	193	38	73	49	14	25	47	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	324	134	0	213	38	0	122	14	0	136	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	250	123	18	178	35	67	45	13	23	43	59
Future Vol, veh/h	48	250	123	18	178	35	67	45	13	23	43	59
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	52	272	134	20	193	38	73	49	14	25	47	64
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay, s/veh	13.3	11.7	11.6	11.5
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	60%	0%	16%	0%	9%	0%	18%
Vol Thru, %	40%	0%	84%	0%	91%	0%	34%
Vol Right, %	0%	100%	0%	100%	0%	100%	47%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	112	13	298	123	196	35	125
LT Vol	67	0	48	0	18	0	23
Through Vol	45	0	250	0	178	0	43
RT Vol	0	13	0	123	0	35	59
Lane Flow Rate	122	14	324	134	213	38	136
Geometry Grp	5	5	5	5	5	5	4b
Degree of Util (X)	0.235	0.023	0.53	0.189	0.361	0.057	0.242
Departure Headway (Hd)	6.962	5.947	5.887	5.097	6.107	5.35	6.422
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	515	600	612	703	588	668	558
Service Time	4.719	3.703	3.625	2.834	3.852	3.094	4.476
HCM Lane V/C Ratio	0.237	0.023	0.529	0.191	0.362	0.057	0.244
HCM Control Delay, s/veh	11.9	8.8	15.1	9	12.3	8.4	11.5
HCM Lane LOS	B	A	C	A	B	A	B
HCM 95th-tile Q	0.9	0.1	3.1	0.7	1.6	0.2	0.9



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	77	17	0	82	8	0
Future Volume (vph)	77	17	0	82	8	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.976					
Flt Protected					0.950	
Satd. Flow (prot)	1818	0	0	1863	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	1818	0	0	1863	1770	0
Link Speed (mph)	55			55	55	
Link Distance (ft)	739			580	300	
Travel Time (s)	9.2			7.2	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	18	0	89	9	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	102	0	0	89	9	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 15.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	77	17	0	82	8	0
Future Vol, veh/h	77	17	0	82	8	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	84	18	0	89	9	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	102	0	182	93
Stage 1	-	-	-	-	93	-
Stage 2	-	-	-	-	89	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1490	-	807	964
Stage 1	-	-	-	-	931	-
Stage 2	-	-	-	-	934	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1490	-	807	964
Mov Cap-2 Maneuver	-	-	-	-	807	-
Stage 1	-	-	-	-	931	-
Stage 2	-	-	-	-	934	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	807	-	-	1490	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s/veh)	9.5	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	85	1	2	87	0	1
Future Volume (vph)	85	1	2	87	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.865	
Flt Protected				0.999		
Satd. Flow (prot)	1861	0	0	1861	1611	0
Flt Permitted				0.999		
Satd. Flow (perm)	1861	0	0	1861	1611	0
Link Speed (mph)	55			55	55	
Link Distance (ft)	580			1360	308	
Travel Time (s)	7.2			16.9	3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	1	2	95	0	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	93	0	0	97	1	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.2%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	5	230	6	0	433
Future Volume (vph)	0	5	230	6	0	433
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865	0.996			
Flt Protected						
Satd. Flow (prot)	0	1611	1855	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	1611	1855	0	0	1863
Link Speed (mph)	55		55			55
Link Distance (ft)	2684		2106			548
Travel Time (s)	33.3		26.1			6.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	5	250	7	0	471
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	5	257	0	0	471
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	230	6	0	433
Future Vol, veh/h	0	5	230	6	0	433
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	250	7	0	471

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	254	0	0	257	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	0	785	-	-	1308	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	785	-	-	1308	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	785	1308	-
HCM Lane V/C Ratio	-	-	0.007	-	-
HCM Control Delay (s/veh)	-	-	9.6	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	8	14	0	0	16
Future Volume (vph)	9	8	14	0	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.936				0.865	
Flt Protected	0.974			0.950		
Satd. Flow (prot)	1698	0	0	1770	1611	0
Flt Permitted	0.974			0.950		
Satd. Flow (perm)	1698	0	0	1770	1611	0
Link Speed (mph)	55			55	55	
Link Distance (ft)	2684			2002	635	
Travel Time (s)	33.3			24.8	7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	9	15	0	0	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	0	0	15	17	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.4%		ICU Level of Service A	
Analysis Period (min) 15			

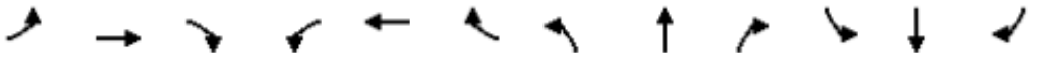
Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	8	14	0	0	16
Future Vol, veh/h	9	8	14	0	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	9	15	0	0	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	39	9	17	0	-	0
Stage 1	9	-	-	-	-	-
Stage 2	30	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	973	1073	1600	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	964	1073	1600	-	-	-
Mov Cap-2 Maneuver	964	-	-	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	993	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.6	7.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1600	-	1012	-	-
HCM Lane V/C Ratio	0.01	-	0.018	-	-
HCM Control Delay (s/veh)	7.3	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	72	5	224	92	502	0	0	723	163
Future Volume (vph)	0	0	0	72	5	224	92	502	0	0	723	163
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		0	0		350	200		0	80		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850						0.850
Flt Protected					0.955		0.950					
Satd. Flow (prot)	0	0	0	0	1779	1458	1630	1863	0	0	1863	1458
Flt Permitted					0.955		0.309					
Satd. Flow (perm)	0	0	0	0	1779	1458	530	1863	0	0	1863	1458
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						243						177
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1153			2492			645			504	
Travel Time (s)		14.3			30.9			8.0			6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	78	5	243	100	546	0	0	786	177
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	83	243	100	546	0	0	786	177
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	1	1	1	1			1	1
Detector Template												
Leading Detector (ft)				50	50	50	50	50			50	50
Trailing Detector (ft)				0	0	0	0	0			0	0
Detector 1 Position(ft)				0	0	0	0	0			0	0
Detector 1 Size(ft)				50	50	50	50	50			50	50
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases				8		8	2					6
Detector Phase				8	8	8	2	2			6	6
Switch Phase												
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0			4.0	4.0
Minimum Split (s)				24.0	24.0	24.0	24.0	24.0			24.0	24.0
Total Split (s)				31.0	31.0	31.0	59.0	59.0			59.0	59.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)				34.4%	34.4%	34.4%	65.6%	65.6%			65.6%	65.6%
Maximum Green (s)				25.0	25.0	25.0	53.0	53.0			53.0	53.0
Yellow Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0			1.0	1.0
Lost Time Adjust (s)					0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)					6.0	6.0	6.0	6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode				None	None	None	C-Max	C-Max			C-Max	C-Max
Walk Time (s)				7.0	7.0	7.0	7.0	7.0			7.0	7.0
Flash Don't Walk (s)				11.0	11.0	11.0	11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0	0	0	0			0	0
Act Effct Green (s)					9.8	9.8	68.2	68.2			68.2	68.2
Actuated g/C Ratio					0.11	0.11	0.76	0.76			0.76	0.76
v/c Ratio					0.43	0.65	0.25	0.39			0.56	0.15
Control Delay (s/veh)					43.3	13.6	4.7	4.5			6.9	1.0
Queue Delay					0.0	0.0	0.0	0.0			0.0	0.0
Total Delay (s/veh)					43.3	13.6	4.7	4.5			6.9	1.0
LOS					D	B	A	A			A	A
Approach Delay (s/veh)					21.1			4.6			5.8	
Approach LOS					C			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay (s/veh): 8.0		Intersection LOS: A	
Intersection Capacity Utilization 68.9%		ICU Level of Service C	
Analysis Period (min) 15			

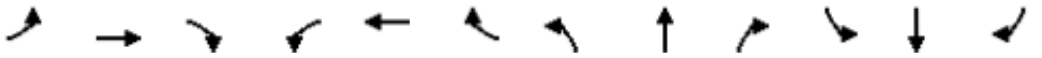
Splits and Phases: 1: Shirk St & SR 198 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	72	5	224	92	502	0	0	723	163
Future Volume (veh/h)	0	0	0	72	5	224	92	502	0	0	723	163
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1750	1863	1716	1716	1863	0	0	1863	1716
Adj Flow Rate, veh/h				78	5	243	100	546	0	0	786	177
Adj No. of Lanes				0	1	1	1	1	0	0	1	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				322	21	281	313	1256	0	0	1256	983
Arrive On Green				0.19	0.19	0.19	1.00	1.00	0.00	0.00	0.67	0.67
Sat Flow, veh/h				1672	107	1458	535	1863	0	0	1863	1458
Grp Volume(v), veh/h				83	0	243	100	546	0	0	786	177
Grp Sat Flow(s),veh/h/ln				1779	0	1458	535	1863	0	0	1863	1458
Q Serve(g_s), s				3.6	0.0	14.5	8.2	0.0	0.0	0.0	21.4	4.1
Cycle Q Clear(g_c), s				3.6	0.0	14.5	29.6	0.0	0.0	0.0	21.4	4.1
Prop In Lane				0.94		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				342	0	281	313	1256	0	0	1256	983
V/C Ratio(X)				0.24	0.00	0.87	0.32	0.43	0.00	0.00	0.63	0.18
Avail Cap(c_a), veh/h				494	0	405	313	1256	0	0	1256	983
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.97	0.97	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				30.8	0.0	35.2	5.2	0.0	0.0	0.0	8.3	5.4
Incr Delay (d2), s/veh				0.4	0.0	12.7	2.6	1.1	0.0	0.0	2.4	0.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.8	0.0	6.9	1.4	0.4	0.0	0.0	11.7	1.7
LnGrp Delay(d), s/veh				31.1	0.0	47.9	7.8	1.1	0.0	0.0	10.6	5.8
LnGrp LOS				C		D	A	A			B	A
Approach Vol, veh/h					326			646			963	
Approach Delay, s/veh					43.7			2.1			9.7	
Approach LOS					D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		66.7				66.7		23.3
Change Period (Y+Rc), s		6.0				6.0		6.0
Max Green Setting (Gmax), s		53.0				53.0		25.0
Max Q Clear Time (g_c+I1), s		31.6				23.4		16.5
Green Ext Time (p_c), s		3.2				4.4		0.8

Intersection Summary	
HCM 2010 Ctrl Delay, s/veh	12.9
HCM 2010 LOS	B



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	239	4	163	0	0	0	0	335	50	379	349	0
Future Volume (vph)	239	4	163	0	0	0	0	335	50	379	349	0
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		220	0		0	0		90	150		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected		0.953								0.950		
Satd. Flow (prot)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Flt Permitted		0.953								0.533		
Satd. Flow (perm)	0	1775	1458	0	0	0	0	1863	1458	914	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			177						54			
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1076			2120			2339			645	
Travel Time (s)		13.3			26.3			29.0			8.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	260	4	177	0	0	0	0	364	54	412	379	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	264	177	0	0	0	0	364	54	412	379	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1					1	1	1	1	
Detector Template												
Leading Detector (ft)	50	50	50					50	50	50	50	
Trailing Detector (ft)	0	0	0					0	0	0	0	
Detector 1 Position(ft)	0	0	0					0	0	0	0	
Detector 1 Size(ft)	50	50	50					50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Turn Type	Perm	NA	Perm					NA	Perm	Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4		4						2	6		
Detector Phase	4	4	4					2	2	6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0					24.0	24.0	24.0	24.0	
Total Split (s)	24.0	24.0	24.0					66.0	66.0	66.0	66.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	26.7%	26.7%	26.7%					73.3%	73.3%	73.3%	73.3%	
Maximum Green (s)	18.0	18.0	18.0					60.0	60.0	60.0	60.0	
Yellow Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0	6.0					6.0	6.0	6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0					11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0					0	0	0	0	
Act Effct Green (s)		16.6	16.6					61.4	61.4	61.4	61.4	
Actuated g/C Ratio		0.18	0.18					0.68	0.68	0.68	0.68	
v/c Ratio		0.81	0.43					0.29	0.05	0.66	0.30	
Control Delay (s/veh)		54.9	8.6					6.0	1.9	12.2	3.9	
Queue Delay		0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay (s/veh)		54.9	8.6					6.0	1.9	12.2	3.9	
LOS		D	A					A	A	B	A	
Approach Delay (s/veh)		36.3						5.4			8.2	
Approach LOS		D						A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay (s/veh): 15.0		Intersection LOS: B	
Intersection Capacity Utilization 68.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: Shirk St & SR 138 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	239	4	163	0	0	0	0	335	50	379	349	0
Future Volume (veh/h)	239	4	163	0	0	0	0	335	50	379	349	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1750	1863	1716				0	1863	1716	1716	1863	0
Adj Flow Rate, veh/h	260	4	177				0	364	54	412	379	0
Adj No. of Lanes	0	1	1				0	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	302	5	252				0	1293	1012	631	1293	0
Arrive On Green	0.17	0.17	0.17				0.00	0.69	0.69	1.00	1.00	0.00
Sat Flow, veh/h	1748	27	1458				0	1863	1458	888	1863	0
Grp Volume(v), veh/h	264	0	177				0	364	54	412	379	0
Grp Sat Flow(s),veh/h/ln	1775	0	1458				0	1863	1458	888	1863	0
Q Serve(g_s), s	13.0	0.0	10.3				0.0	6.7	1.1	13.5	0.0	0.0
Cycle Q Clear(g_c), s	13.0	0.0	10.3				0.0	6.7	1.1	20.2	0.0	0.0
Prop In Lane	0.98		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	306	0	252				0	1293	1012	631	1293	0
V/C Ratio(X)	0.86	0.00	0.70				0.00	0.28	0.05	0.65	0.29	0.00
Avail Cap(c_a), veh/h	355	0	292				0	1293	1012	631	1293	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.67	1.67	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.81	0.81	0.00
Uniform Delay (d), s/veh	36.2	0.0	35.1				0.0	5.2	4.4	1.1	0.0	0.0
Incr Delay (d2), s/veh	17.1	0.0	6.2				0.0	0.5	0.1	4.2	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	4.6				0.0	3.6	0.4	3.6	0.2	0.0
LnGrp Delay(d), s/veh	53.3	0.0	41.3				0.0	5.8	4.5	5.3	0.5	0.0
LnGrp LOS	D		D					A	A	A	A	
Approach Vol, veh/h		441						418			791	
Approach Delay, s/veh		48.5						5.6			3.0	
Approach LOS		D						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		68.5		21.5		68.5		
Change Period (Y+Rc), s		6.0		6.0		6.0		
Max Green Setting (Gmax), s		60.0		18.0		60.0		
Max Q Clear Time (g_c+I1), s		8.7		15.0		22.2		
Green Ext Time (p_c), s		1.5		0.5		4.7		

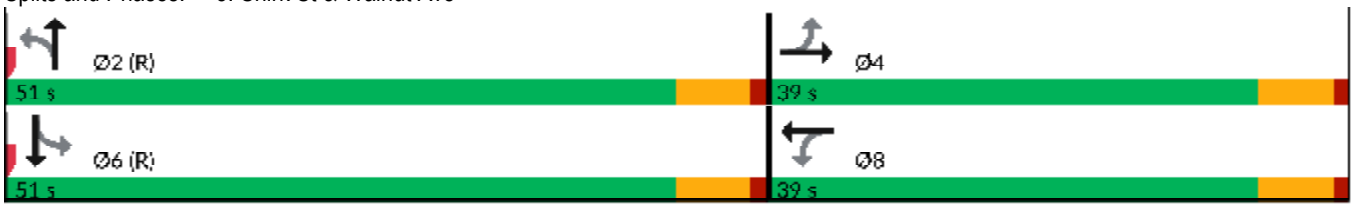
Intersection Summary	
HCM 2010 Ctrl Delay, s/veh	15.8
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	156	71	36	71	124	38	206	52	265	251	10
Future Volume (vph)	14	156	71	36	71	124	38	206	52	265	251	10
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.960			0.927			0.976			0.997	
Flt Protected		0.997			0.992			0.994			0.975	
Satd. Flow (prot)	0	1783	0	0	1713	0	0	1807	0	0	1811	0
Flt Permitted		0.965			0.798			0.893			0.694	
Satd. Flow (perm)	0	1726	0	0	1378	0	0	1624	0	0	1289	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			74			17			2	
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1796			2695			2949			2654	
Travel Time (s)		22.3			33.4			36.6			32.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	170	77	39	77	135	41	224	57	288	273	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	262	0	0	251	0	0	322	0	0	572	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	50	50		50	50		50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	39.0	39.0		39.0	39.0		51.0	51.0		51.0	51.0	
Total Split (%)	43.3%	43.3%		43.3%	43.3%		56.7%	56.7%		56.7%	56.7%	
Maximum Green (s)	33.0	33.0		33.0	33.0		45.0	45.0		45.0	45.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		17.8			17.8			60.2			60.2	
Actuated g/C Ratio		0.20			0.20			0.67			0.67	
v/c Ratio		0.72			0.76			0.30			0.66	
Control Delay (s/veh)		41.4			38.0			7.5			16.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		41.4			38.0			7.5			16.5	
LOS		D			D			A			B	
Approach Delay (s/veh)		41.4			38.0			7.5			16.5	
Approach LOS		D			D			A			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay (s/veh): 22.9		Intersection LOS: C	
Intersection Capacity Utilization 84.1%		ICU Level of Service E	
Analysis Period (min) 15			

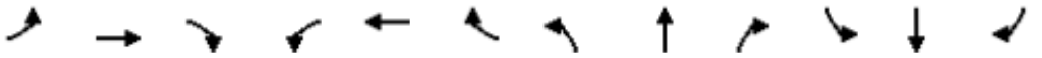
Splits and Phases: 5: Shirk St & Walnut Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	156	71	36	71	124	38	206	52	265	251	10
Future Volume (veh/h)	14	156	71	36	71	124	38	206	52	265	251	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1750	1863	1750	1750	1863	1750	1750	1863	1750	1750	1863	1750
Adj Flow Rate, veh/h	15	170	77	39	77	135	41	224	57	288	273	11
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	51	217	94	77	104	157	160	848	207	531	470	18
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.69	0.69	0.69	0.69	0.69	0.69
Sat Flow, veh/h	51	1205	522	171	578	872	167	1236	302	687	685	27
Grp Volume(v), veh/h	262	0	0	251	0	0	322	0	0	572	0	0
Grp Sat Flow(s),veh/h/ln	1777	0	0	1620	0	0	1705	0	0	1398	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	12.0	0.0	0.0
Cycle Q Clear(g_c), s	12.7	0.0	0.0	13.4	0.0	0.0	6.1	0.0	0.0	18.2	0.0	0.0
Prop In Lane	0.06		0.29	0.16		0.54	0.13		0.18	0.50		0.02
Lane Grp Cap(c), veh/h	363	0	0	339	0	0	1215	0	0	1020	0	0
V/C Ratio(X)	0.72	0.00	0.00	0.74	0.00	0.00	0.26	0.00	0.00	0.56	0.00	0.00
Avail Cap(c_a), veh/h	682	0	0	629	0	0	1215	0	0	1020	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	35.5	0.0	0.0	35.6	0.0	0.0	5.4	0.0	0.0	7.1	0.0	0.0
Incr Delay (d2), s/veh	2.7	0.0	0.0	3.2	0.0	0.0	0.5	0.0	0.0	2.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	0.0	0.0	6.3	0.0	0.0	3.2	0.0	0.0	7.8	0.0	0.0
LnGrp Delay(d), s/veh	38.2	0.0	0.0	38.8	0.0	0.0	5.9	0.0	0.0	9.3	0.0	0.0
LnGrp LOS	D			D			A			A		
Approach Vol, veh/h		262			251			322			572	
Approach Delay, s/veh		38.2			38.8			5.9			9.3	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		67.8		22.2		67.8		22.2
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		45.0		33.0		45.0		33.0
Max Q Clear Time (g_c+I1), s		8.1		14.7		20.2		15.4
Green Ext Time (p_c), s		1.2		0.8		2.7		0.8

Intersection Summary	
HCM 2010 Ctrl Delay, s/veh	19.2
HCM 2010 LOS	B



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	73	6	244	103	616	0	0	928	187
Future Volume (vph)	0	0	0	73	6	244	103	616	0	0	928	187
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		0	0		350	200		0	80		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850						0.850
Flt Protected					0.956		0.950					
Satd. Flow (prot)	0	0	0	0	1781	1458	1630	1863	0	0	1863	1458
Flt Permitted					0.956		0.950					
Satd. Flow (perm)	0	0	0	0	1781	1458	1630	1863	0	0	1863	1458
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1153			2492			645			504	
Travel Time (s)		14.3			30.9			8.0			6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	79	7	265	112	670	0	0	1009	203
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	86	265	112	670	0	0	1009	203
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

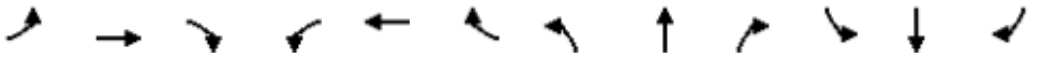
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.5%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	238.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	73	6	244	103	616	0	0	928	187
Future Vol, veh/h	0	0	0	73	6	244	103	616	0	0	928	187
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	79	7	265	112	670	0	0	1009	203
Number of Lanes	0	0	0	0	1	1	1	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay, s/veh	18.3	144	362.5
HCM LOS	C	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	92%	0%	0%	0%
Vol Thru, %	0%	100%	8%	0%	100%	0%
Vol Right, %	0%	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	103	616	79	244	928	187
LT Vol	103	0	73	0	0	0
Through Vol	0	616	6	0	928	0
RT Vol	0	0	0	244	0	187
Lane Flow Rate	112	670	86	265	1009	203
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	0.23	1.281	0.196	0.521	1.908	0.345
Departure Headway (Hd)	8.291	7.775	9.456	8.234	7.17	6.451
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	436	475	382	440	514	561
Service Time	5.991	5.475	7.156	5.934	4.87	4.151
HCM Lane V/C Ratio	0.257	1.411	0.225	0.602	1.963	0.362
HCM Control Delay, s/veh	13.5	165.8	14.4	19.5	433	12.5
HCM Lane LOS	B	F	B	C	F	B
HCM 95th-tile Q	0.9	25.1	0.7	2.9	62.7	1.5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	251	5	170	0	0	0	0	436	52	422	413	0
Future Volume (vph)	251	5	170	0	0	0	0	436	52	422	413	0
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		220	0		0	0		90	150		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected		0.953								0.950		
Satd. Flow (prot)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1076			2120			2339			645	
Travel Time (s)		13.3			26.3			29.0			8.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	273	5	185	0	0	0	0	474	57	459	449	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	278	185	0	0	0	0	474	57	459	449	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	52.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	251	5	170	0	0	0	0	436	52	422	413	0
Future Vol, veh/h	251	5	170	0	0	0	0	436	52	422	413	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	273	5	185	0	0	0	0	474	57	459	449	0
Number of Lanes	0	1	1	0	0	0	0	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay, s/veh	21.6	71.3	56.6
HCM LOS	C	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	0%	98%	0%	100%	0%
Vol Thru, %	100%	0%	2%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	436	52	256	170	422	413
LT Vol	0	0	251	0	422	0
Through Vol	436	0	5	0	0	413
RT Vol	0	52	0	170	0	0
Lane Flow Rate	474	57	278	185	459	449
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	1.032	0.112	0.656	0.373	0.985	0.9
Departure Headway (Hd)	7.843	7.121	8.599	7.372	7.878	7.363
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	464	506	423	492	463	494
Service Time	5.543	4.821	6.299	5.072	5.578	5.063
HCM Lane V/C Ratio	1.022	0.113	0.657	0.376	0.991	0.909
HCM Control Delay, s/veh	78.5	10.7	26.3	14.4	66.4	46.6
HCM Lane LOS	F	B	D	B	F	E
HCM 95th-tile Q	14.3	0.4	4.6	1.7	12.6	10.1



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	15	20	290	12	18	426
Future Volume (vph)	15	20	290	12	18	426
Ideal Flow (vphpl)	1750	1750	1900	1750	1750	1900
Storage Length (ft)	100	50		50	100	
Storage Lanes	1	0		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1630	1458	1863	1458	1630	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1630	1458	1863	1458	1630	1863
Link Speed (mph)	55		55			55
Link Distance (ft)	2679		2654			2339
Travel Time (s)	33.2		32.9			29.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	22	315	13	20	463
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	22	315	13	20	463
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.00	1.11	1.11	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

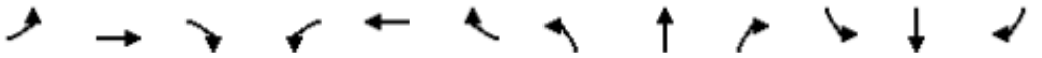
Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	20	290	12	18	426
Future Vol, veh/h	15	20	290	12	18	426
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	50	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	22	315	13	20	463

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	818	315	0	0	328	0
Stage 1	315	-	-	-	-	-
Stage 2	503	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	346	725	-	-	1232	-
Stage 1	740	-	-	-	-	-
Stage 2	607	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	340	725	-	-	1232	-
Mov Cap-2 Maneuver	340	-	-	-	-	-
Stage 1	740	-	-	-	-	-
Stage 2	597	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.7	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	340	725	1232	-
HCM Lane V/C Ratio	-	-	0.048	0.03	0.016	-
HCM Control Delay (s/veh)	-	-	16.1	10.1	8	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	106	2	125	110	10	3	3	73	8	6	2
Future Volume (vph)	4	106	2	125	110	10	3	3	73	8	6	2
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	100		50	100		50	100		50	100		50
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1630	1863	1458	1630	1863	1458	1630	1863	1458	1630	1863	1458
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1630	1863	1458	1630	1863	1458	1630	1863	1458	1630	1863	1458
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2679			1533			2637			1348	
Travel Time (s)		33.2			19.0			32.7			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	115	2	136	120	11	3	3	79	9	7	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	115	2	136	120	11	3	3	79	9	7	2
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.0%		ICU Level of Service A	
Analysis Period (min) 15			

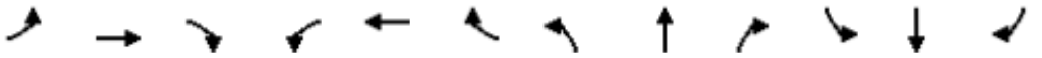
Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	106	2	125	110	10	3	3	73	8	6	2
Future Vol, veh/h	4	106	2	125	110	10	3	3	73	8	6	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	50	100	-	50	100	-	50	100	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	115	2	136	120	11	3	3	79	9	7	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	139	113	7	94	36	3	9	0	0	82	0	0
Stage 1	25	25	-	9	9	-	-	-	-	-	-	-
Stage 2	114	88	-	85	27	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	831	777	1075	889	856	1081	1611	-	-	1515	-	-
Stage 1	993	874	-	1012	888	-	-	-	-	-	-	-
Stage 2	891	822	-	923	873	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	730	771	1075	781	849	1081	1611	-	-	1515	-	-
Mov Cap-2 Maneuver	730	771	-	781	849	-	-	-	-	-	-	-
Stage 1	991	869	-	1010	886	-	-	-	-	-	-	-
Stage 2	762	820	-	794	868	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	10.4	10.2	0.3	3.7
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1611	-	-	730	771	1075	781	849	1081	1515	-	-
HCM Lane V/C Ratio	0.002	-	-	0.006	0.149	0.002	0.174	0.141	0.01	0.006	-	-
HCM Control Delay (s/veh)	7.2	-	-	10	10.5	8.4	10.6	9.9	8.4	7.4	-	-
HCM Lane LOS	A	-	-	B	B	A	B	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.5	0	0.6	0.5	0	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	188	78	37	73	125	44	259	59	297	313	12
Future Volume (vph)	16	188	78	37	73	125	44	259	59	297	313	12
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.928			0.978			0.997	
Flt Protected		0.997			0.992			0.994			0.977	
Satd. Flow (prot)	0	1787	0	0	1715	0	0	1811	0	0	1814	0
Flt Permitted		0.997			0.992			0.994			0.977	
Satd. Flow (perm)	0	1787	0	0	1715	0	0	1811	0	0	1814	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1796			2695			2949			2654	
Travel Time (s)		22.3			33.4			36.6			32.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	204	85	40	79	136	48	282	64	323	340	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	306	0	0	255	0	0	394	0	0	676	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

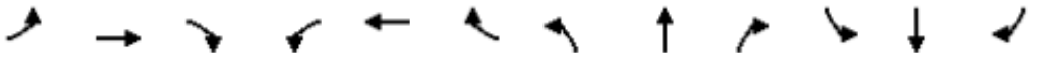
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 88.5%		ICU Level of Service E	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	114.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	188	78	37	73	125	44	259	59	297	313	12
Future Vol, veh/h	16	188	78	37	73	125	44	259	59	297	313	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	204	85	40	79	136	48	282	64	323	340	13
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	29	23.9	41.1	229.4
HCM LOS	D	C	E	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	6%	16%	48%
Vol Thru, %	72%	67%	31%	50%
Vol Right, %	16%	28%	53%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	362	282	235	622
LT Vol	44	16	37	297
Through Vol	259	188	73	313
RT Vol	59	78	125	12
Lane Flow Rate	393	307	255	676
Geometry Grp	1	1	1	1
Degree of Util (X)	0.827	0.676	0.571	1.436
Departure Headway (Hd)	8.544	9.078	9.248	7.644
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	429	402	393	480
Service Time	6.544	7.078	7.248	5.644
HCM Lane V/C Ratio	0.916	0.764	0.649	1.408
HCM Control Delay, s/veh	41.1	29	23.9	229.4
HCM Lane LOS	E	D	C	F
HCM 95th-tile Q	7.7	4.8	3.4	33.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	253	126	22	250	42	72	51	14	21	46	64
Future Volume (vph)	49	253	126	22	250	42	72	51	14	21	46	64
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		50	0		140	0		50	0		0
Storage Lanes	0		1	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.934	
Flt Protected		0.992			0.996			0.972			0.992	
Satd. Flow (prot)	0	1848	1458	0	1855	1458	0	1811	1458	0	1726	0
Flt Permitted		0.992			0.996			0.972			0.992	
Satd. Flow (perm)	0	1848	1458	0	1855	1458	0	1811	1458	0	1726	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2695			2169			2270			2637	
Travel Time (s)		33.4			26.9			28.1			32.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	275	137	24	272	46	78	55	15	23	50	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	328	137	0	296	46	0	133	15	0	143	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

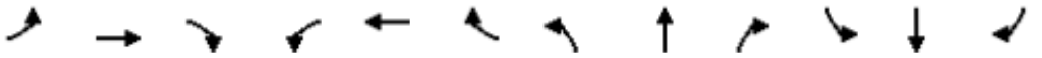
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	14
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	49	253	126	22	250	42	72	51	14	21	46	64
Future Vol, veh/h	49	253	126	22	250	42	72	51	14	21	46	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	53	275	137	24	272	46	78	55	15	23	50	70
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay, s/veh	14.5	14.6	12.4	12.3
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	59%	0%	16%	0%	8%	0%	16%
Vol Thru, %	41%	0%	84%	0%	92%	0%	35%
Vol Right, %	0%	100%	0%	100%	0%	100%	49%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	123	14	302	126	272	42	131
LT Vol	72	0	49	0	22	0	21
Through Vol	51	0	253	0	250	0	46
RT Vol	0	14	0	126	0	42	64
Lane Flow Rate	134	15	328	137	296	46	142
Geometry Grp	5	5	5	5	5	5	4b
Degree of Util (X)	0.271	0.027	0.561	0.204	0.514	0.07	0.268
Departure Headway (Hd)	7.293	6.281	6.15	5.357	6.259	5.506	6.77
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	491	566	584	666	574	646	527
Service Time	5.076	4.063	3.916	3.123	4.029	3.276	4.856
HCM Lane V/C Ratio	0.273	0.027	0.562	0.206	0.516	0.071	0.269
HCM Control Delay, s/veh	12.8	9.2	16.6	9.5	15.5	8.7	12.3
HCM Lane LOS	B	A	C	A	C	A	B
HCM 95th-tile Q	1.1	0.1	3.5	0.8	2.9	0.2	1.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	86	6	244	103	619	0	0	940	187
Future Volume (vph)	0	0	0	86	6	244	103	619	0	0	940	187
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		0	0		350	200		0	80		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850					0.975	
Flt Protected					0.956		0.950					
Satd. Flow (prot)	0	0	0	0	1781	1458	1630	1863	0	1716	1816	0
Flt Permitted					0.956		0.950					
Satd. Flow (perm)	0	0	0	0	1781	1458	1630	1863	0	1716	1816	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1153			2492			645			504	
Travel Time (s)		14.3			30.9			8.0			6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	93	7	265	112	673	0	0	1022	203
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	100	265	112	673	0	0	1225	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

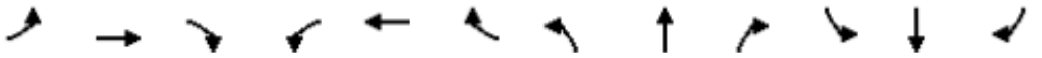
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 82.2%		ICU Level of Service E	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	354.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	86	6	244	103	619	0	0	940	187
Future Vol, veh/h	0	0	0	86	6	244	103	619	0	0	940	187
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	93	7	265	112	673	0	0	1022	203
Number of Lanes	0	0	0	0	1	1	1	1	0	1	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay, s/veh	18.8	128.1	600.2
HCM LOS	C	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	93%	0%	0%	0%
Vol Thru, %	0%	100%	7%	0%	100%	83%
Vol Right, %	0%	0%	0%	100%	0%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	103	619	92	244	0	1127
LT Vol	103	0	86	0	0	0
Through Vol	0	619	6	0	0	940
RT Vol	0	0	0	244	0	187
Lane Flow Rate	112	673	100	265	0	1225
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	0.22	1.231	0.226	0.513	0	2.285
Departure Headway (Hd)	8.523	8.001	9.9	8.659	7.146	7.027
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	424	458	365	419	0	527
Service Time	6.223	5.701	7.6	6.359	4.846	4.727
HCM Lane V/C Ratio	0.264	1.469	0.274	0.632	0	2.324
HCM Control Delay, s/veh	13.6	147.1	15.5	20.1	9.8	600.2
HCM Lane LOS	B	F	C	C	N	F
HCM 95th-tile Q	0.8	22.3	0.9	2.8	0	87.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	251	5	170	0	0	0	0	439	62	422	438	0
Future Volume (vph)	251	5	170	0	0	0	0	439	62	422	438	0
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		220	0		0	0		90	150		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected		0.953								0.950		
Satd. Flow (prot)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1076			2120			2339			645	
Travel Time (s)		13.3			26.3			29.0			8.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	273	5	185	0	0	0	0	477	67	459	476	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	278	185	0	0	0	0	477	67	459	476	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	56.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	251	5	170	0	0	0	0	439	62	422	438	0
Future Vol, veh/h	251	5	170	0	0	0	0	439	62	422	438	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	273	5	185	0	0	0	0	477	67	459	476	0
Number of Lanes	0	1	1	0	0	0	0	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay, s/veh	21.8	73.9	62.9
HCM LOS	C	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	0%	98%	0%	100%	0%
Vol Thru, %	100%	0%	2%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	439	62	256	170	422	438
LT Vol	0	0	251	0	422	0
Through Vol	439	0	5	0	0	438
RT Vol	0	62	0	170	0	0
Lane Flow Rate	477	67	278	185	459	476
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	1.046	0.134	0.66	0.375	0.99	0.959
Departure Headway (Hd)	7.894	7.173	8.656	7.429	7.915	7.4
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	463	503	420	488	463	495
Service Time	5.594	4.873	6.356	5.129	5.615	5.1
HCM Lane V/C Ratio	1.03	0.133	0.662	0.379	0.991	0.962
HCM Control Delay, s/veh	82.8	11	26.6	14.5	67.8	58.1
HCM Lane LOS	F	B	D	B	F	F
HCM 95th-tile Q	14.7	0.5	4.6	1.7	12.7	12



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	19	28	295	20	43	426
Future Volume (vph)	19	28	295	20	43	426
Ideal Flow (vphpl)	1750	1750	1900	1750	1750	1900
Storage Length (ft)	100	50		50	100	
Storage Lanes	1	0		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1630	1458	1863	1458	1630	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1630	1458	1863	1458	1630	1863
Link Speed (mph)	55		55			55
Link Distance (ft)	739		548			2339
Travel Time (s)	9.2		6.8			29.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	30	321	22	47	463
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	30	321	22	47	463
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.00	1.11	1.11	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Stop			Stop

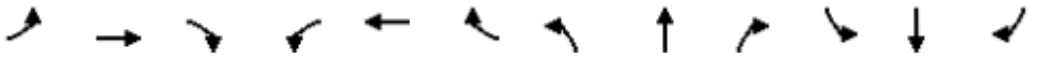
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	13.7
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	28	295	20	43	426
Future Vol, veh/h	19	28	295	20	43	426
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	30	321	22	47	463
Number of Lanes	1	1	1	1	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay, s/veh	9.3	11.8	15.4
HCM LOS	A	B	C

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	0%	100%	0%	100%	0%
Vol Thru, %	100%	0%	0%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	295	20	19	28	43	426
LT Vol	0	0	19	0	43	0
Through Vol	295	0	0	0	0	426
RT Vol	0	20	0	28	0	0
Lane Flow Rate	321	22	21	30	47	463
Geometry Grp	5	5	5	5	5	5
Degree of Util (X)	0.456	0.027	0.04	0.049	0.071	0.639
Departure Headway (Hd)	5.114	4.41	6.983	5.768	5.468	4.966
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	705	810	511	617	655	727
Service Time	2.849	2.144	4.753	3.537	3.2	2.698
HCM Lane V/C Ratio	0.455	0.027	0.041	0.049	0.072	0.637
HCM Control Delay, s/veh	12.1	7.3	10	8.8	8.6	16.1
HCM Lane LOS	B	A	A	A	A	C
HCM 95th-tile Q	2.4	0.1	0.1	0.2	0.2	4.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	114	3	164	120	10	5	3	95	8	6	2
Future Volume (vph)	4	114	3	164	120	10	5	3	95	8	6	2
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	100		50	100		50	100		50	100		50
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1630	1863	1458	1630	1863	1458	1630	1863	1458	1630	1863	1458
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1630	1863	1458	1630	1863	1458	1630	1863	1458	1630	1863	1458
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1360			1533			635			1348	
Travel Time (s)		16.9			19.0			7.9			16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	124	3	178	130	11	5	3	103	9	7	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	124	3	178	130	11	5	3	103	9	7	2
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.3%		ICU Level of Service A	
Analysis Period (min) 15			

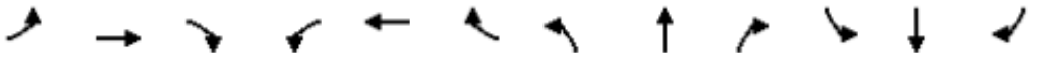
Intersection	
Int Delay, s/veh	8.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	114	3	164	120	10	5	3	95	8	6	2
Future Vol, veh/h	4	114	3	164	120	10	5	3	95	8	6	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	50	100	-	50	100	-	50	100	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	124	3	178	130	11	5	3	103	9	7	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	160	141	7	103	40	3	9	0	0	106	0	0
Stage 1	25	25	-	13	13	-	-	-	-	-	-	-
Stage 2	135	116	-	90	27	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	806	750	1075	877	852	1081	1611	-	-	1485	-	-
Stage 1	993	874	-	1007	885	-	-	-	-	-	-	-
Stage 2	868	800	-	917	873	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	699	743	1075	757	844	1081	1611	-	-	1485	-	-
Mov Cap-2 Maneuver	699	743	-	757	844	-	-	-	-	-	-	-
Stage 1	990	869	-	1004	882	-	-	-	-	-	-	-
Stage 2	730	798	-	779	868	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	10.7	10.6	0.4	3.7
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1611	-	-	699	743	1075	757	844	1081	1485	-	-
HCM Lane V/C Ratio	0.003	-	-	0.006	0.167	0.003	0.235	0.155	0.01	0.006	-	-
HCM Control Delay (s/veh)	7.2	-	-	10.2	10.8	8.4	11.2	10	8.4	7.4	-	-
HCM Lane LOS	A	-	-	B	B	A	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.6	0	0.9	0.5	0	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	188	78	37	73	131	44	273	59	301	321	12
Future Volume (vph)	16	188	78	37	73	131	44	273	59	301	321	12
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.927			0.979			0.997	
Flt Protected		0.997			0.992			0.994			0.977	
Satd. Flow (prot)	0	1787	0	0	1713	0	0	1813	0	0	1814	0
Flt Permitted		0.997			0.992			0.994			0.977	
Satd. Flow (perm)	0	1787	0	0	1713	0	0	1813	0	0	1814	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1796			2695			2949			2106	
Travel Time (s)		22.3			33.4			36.6			26.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	204	85	40	79	142	48	297	64	327	349	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	306	0	0	261	0	0	409	0	0	689	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

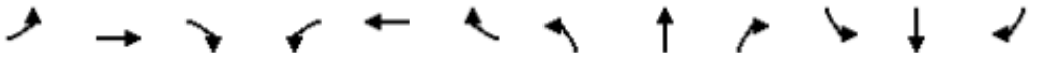
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 90.3%		ICU Level of Service E	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	126
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	188	78	37	73	131	44	273	59	301	321	12
Future Vol, veh/h	16	188	78	37	73	131	44	273	59	301	321	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	204	85	40	79	142	48	297	64	327	349	13
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	30.4	25.3	47.6	253.3
HCM LOS	D	D	E	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	6%	15%	47%
Vol Thru, %	73%	67%	30%	51%
Vol Right, %	16%	28%	54%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	376	282	241	634
LT Vol	44	16	37	301
Through Vol	273	188	73	321
RT Vol	59	78	131	12
Lane Flow Rate	409	307	262	689
Geometry Grp	1	1	1	1
Degree of Util (X)	0.868	0.686	0.592	1.491
Departure Headway (Hd)	8.739	9.339	9.483	7.79
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	417	389	382	475
Service Time	6.739	7.339	7.483	5.79
HCM Lane V/C Ratio	0.981	0.789	0.686	1.451
HCM Control Delay, s/veh	47.6	30.4	25.3	253.3
HCM Lane LOS	E	D	D	F
HCM 95th-tile Q	8.7	4.9	3.7	35.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	257	126	22	256	61	72	69	14	34	55	64
Future Volume (vph)	49	257	126	22	256	61	72	69	14	34	55	64
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		50	0		140	0		50	0		0
Storage Lanes	0		1	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.943	
Flt Protected		0.992			0.996			0.975			0.989	
Satd. Flow (prot)	0	1848	1458	0	1855	1458	0	1816	1458	0	1737	0
Flt Permitted		0.992			0.996			0.975			0.989	
Satd. Flow (perm)	0	1848	1458	0	1855	1458	0	1816	1458	0	1737	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2695			2169			2270			2002	
Travel Time (s)		33.4			26.9			28.1			24.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	279	137	24	278	66	78	75	15	37	60	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	332	137	0	302	66	0	153	15	0	167	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.3%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	15.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	49	257	126	22	256	61	72	69	14	34	55	64
Future Vol, veh/h	49	257	126	22	256	61	72	69	14	34	55	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	53	279	137	24	278	66	78	75	15	37	60	70
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay, s/veh	16.1	15.9	13.5	13.7
HCM LOS	C	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	51%	0%	16%	0%	8%	0%	22%
Vol Thru, %	49%	0%	84%	0%	92%	0%	36%
Vol Right, %	0%	100%	0%	100%	0%	100%	42%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	141	14	306	126	278	61	153
LT Vol	72	0	49	0	22	0	34
Through Vol	69	0	257	0	256	0	55
RT Vol	0	14	0	126	0	61	64
Lane Flow Rate	153	15	333	137	302	66	166
Geometry Grp	5	5	5	5	5	5	4b
Degree of Util (X)	0.322	0.028	0.602	0.218	0.555	0.108	0.329
Departure Headway (Hd)	7.564	6.587	6.519	5.724	6.612	5.857	7.13
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	475	543	555	630	547	614	504
Service Time	5.308	4.33	4.231	3.436	4.325	3.57	5.175
HCM Lane V/C Ratio	0.322	0.028	0.6	0.217	0.552	0.107	0.329
HCM Control Delay, s/veh	13.9	9.5	18.6	10	17.3	9.3	13.7
HCM Lane LOS	B	A	C	A	C	A	B
HCM 95th-tile Q	1.4	0.1	4	0.8	3.4	0.4	1.4



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	103	32	10	103	12	8
Future Volume (vph)	103	32	10	103	12	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.968				0.945	
Flt Protected				0.996	0.971	
Satd. Flow (prot)	1803	0	0	1855	1709	0
Flt Permitted				0.996	0.971	
Satd. Flow (perm)	1803	0	0	1855	1709	0
Link Speed (mph)	55			55	55	
Link Distance (ft)	739			580	300	
Travel Time (s)	9.2			7.2	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	35	11	112	13	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	147	0	0	123	22	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	103	32	10	103	12	8
Future Vol, veh/h	103	32	10	103	12	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	112	35	11	112	13	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	147	0	264	130
Stage 1	-	-	-	-	130	-
Stage 2	-	-	-	-	134	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1435	-	725	920
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	892	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1435	-	719	920
Mov Cap-2 Maneuver	-	-	-	-	719	-
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	885	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.7	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	788	-	-	1435	-
HCM Lane V/C Ratio	0.028	-	-	0.008	-
HCM Control Delay (s/veh)	9.7	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	108	1	2	110	0	1
Future Volume (vph)	108	1	2	110	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.865	
Flt Protected				0.999		
Satd. Flow (prot)	1861	0	0	1861	1611	0
Flt Permitted				0.999		
Satd. Flow (perm)	1861	0	0	1861	1611	0
Link Speed (mph)	55			55	55	
Link Distance (ft)	580			1360	308	
Travel Time (s)	7.2			16.9	3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	1	2	120	0	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	118	0	0	122	1	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	108	1	2	110	0	1
Future Vol, veh/h	108	1	2	110	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	117	1	2	120	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	118	0	242	118
Stage 1	-	-	-	-	118	-
Stage 2	-	-	-	-	124	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1470	-	746	934
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	902	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1470	-	745	934
Mov Cap-2 Maneuver	-	-	-	-	745	-
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	901	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.1	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	934	-	-	1470	-
HCM Lane V/C Ratio	0.001	-	-	0.001	-
HCM Control Delay (s/veh)	8.9	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	13	277	20	0	456
Future Volume (vph)	0	13	277	20	0	456
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865	0.991			
Flt Protected						
Satd. Flow (prot)	0	1611	1846	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	1611	1846	0	0	1863
Link Speed (mph)	55		55			55
Link Distance (ft)	2684		2106			548
Travel Time (s)	33.3		26.1			6.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	14	301	22	0	496
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	14	323	0	0	496
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	13	277	20	0	456
Future Vol, veh/h	0	13	277	20	0	456
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	14	301	22	0	496

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	312	0	0	323	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	0	728	-	-	1237	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	728	-	-	1237	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	10	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	728	1237	-
HCM Lane V/C Ratio	-	-	0.019	-	-
HCM Control Delay (s/veh)	-	-	10	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	23	21	35	2	1	41
Future Volume (vph)	23	21	35	2	1	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.935				0.868	
Flt Protected	0.975			0.955		
Satd. Flow (prot)	1698	0	0	1779	1617	0
Flt Permitted	0.975			0.955		
Satd. Flow (perm)	1698	0	0	1779	1617	0
Link Speed (mph)	55			55	55	
Link Distance (ft)	2684			2002	635	
Travel Time (s)	33.3			24.8	7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	23	38	2	1	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	0	40	46	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	21	35	2	1	41
Future Vol, veh/h	23	21	35	2	1	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	23	38	2	1	45

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	102	24	46	0	-	0
Stage 1	24	-	-	-	-	-
Stage 2	78	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	896	1052	1562	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	874	1052	1562	-	-	-
Mov Cap-2 Maneuver	874	-	-	-	-	-
Stage 1	975	-	-	-	-	-
Stage 2	945	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9	7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1562	-	951	-	-
HCM Lane V/C Ratio	0.024	-	0.05	-	-
HCM Control Delay (s/veh)	7.4	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Scenario Information

Scenario 1
Description:
Data Date: Undefined Data Time: Undefined
Timing Plan ID: Default
Alternative: Baseline
Number of Signalized Intersections: 0
Most Popular Cycle Length: 0

Network Totals

	Scenario 1
Number of Intersections	10
Most Popular Cycle (s)	0
Alternative	Baseline
Timing Plan ID	Default
Data Time	Undefined
Control Delay / Veh (s/v)	116
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	116
Total Delay (hr)	300
Stops / Veh	0.85
Stops (#)	7948
Average Speed (mph)	7
Total Travel Time (hr)	348
Distance Traveled (mi)	2601
Fuel Consumed (gal)	455
Fuel Economy (mpg)	5.7
CO Emissions (kg)	31.78
NOx Emissions (kg)	6.18
VOC Emissions (kg)	7.37
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	0
Performance Index	322.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	86	6	244	103	619	0	0	940	187
Future Volume (vph)	0	0	0	86	6	244	103	619	0	0	940	187
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		0	0		350	200		0	80		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850						0.850
Flt Protected					0.956		0.950					
Satd. Flow (prot)	0	0	0	0	1781	1458	1630	1863	0	0	1863	1458
Flt Permitted					0.956		0.190					
Satd. Flow (perm)	0	0	0	0	1781	1458	326	1863	0	0	1863	1458
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						246						203
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1153			2492			645			504	
Travel Time (s)		14.3			30.9			8.0			6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	93	7	265	112	673	0	0	1022	203
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	100	265	112	673	0	0	1022	203
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	1	1	1	1			1	1
Detector Template												
Leading Detector (ft)				50	50	50	50	50			50	50
Trailing Detector (ft)				0	0	0	0	0			0	0
Detector 1 Position(ft)				0	0	0	0	0			0	0
Detector 1 Size(ft)				50	50	50	50	50			50	50
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases				8		8	2					6
Detector Phase				8	8	8	2	2			6	6
Switch Phase												
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0			4.0	4.0
Minimum Split (s)				24.0	24.0	24.0	24.0	24.0			24.0	24.0
Total Split (s)				31.0	31.0	31.0	59.0	59.0			59.0	59.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)				34.4%	34.4%	34.4%	65.6%	65.6%			65.6%	65.6%
Maximum Green (s)				25.0	25.0	25.0	53.0	53.0			53.0	53.0
Yellow Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0			1.0	1.0
Lost Time Adjust (s)					0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)					6.0	6.0	6.0	6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode				None	None	None	C-Max	C-Max			C-Max	C-Max
Walk Time (s)				7.0	7.0	7.0	7.0	7.0			7.0	7.0
Flash Don't Walk (s)				11.0	11.0	11.0	11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)				0	0	0	0	0			0	0
Act Effct Green (s)					10.8	10.8	67.2	67.2			67.2	67.2
Actuated g/C Ratio					0.12	0.12	0.75	0.75			0.75	0.75
v/c Ratio					0.47	0.68	0.46	0.48			0.73	0.18
Control Delay (s/veh)					43.1	15.5	11.8	5.1			11.5	1.1
Queue Delay					0.0	0.0	0.0	0.2			0.0	0.0
Total Delay (s/veh)					43.1	15.5	11.8	5.3			11.5	1.1
LOS					D	B	B	A			B	A
Approach Delay (s/veh)					23.1			6.2			9.7	
Approach LOS					C			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay (s/veh): 10.6		Intersection LOS: B	
Intersection Capacity Utilization 77.7%		ICU Level of Service D	
Analysis Period (min) 15			

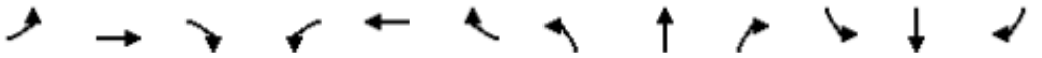
Splits and Phases: 1: Shirk St & SR 198 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	86	6	244	103	619	0	0	940	187
Future Volume (veh/h)	0	0	0	86	6	244	103	619	0	0	940	187
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1750	1863	1716	1716	1863	0	0	1863	1716
Adj Flow Rate, veh/h				93	7	265	112	673	0	0	1022	203
Adj No. of Lanes				0	1	1	1	1	0	0	1	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				343	26	302	182	1228	0	0	1228	961
Arrive On Green				0.21	0.21	0.21	1.00	1.00	0.00	0.00	0.66	0.66
Sat Flow, veh/h				1655	125	1458	418	1863	0	0	1863	1458
Grp Volume(v), veh/h				100	0	265	112	673	0	0	1022	203
Grp Sat Flow(s),veh/h/ln				1780	0	1458	418	1863	0	0	1863	1458
Q Serve(g_s), s				4.2	0.0	15.8	22.1	0.0	0.0	0.0	37.3	5.0
Cycle Q Clear(g_c), s				4.2	0.0	15.8	59.3	0.0	0.0	0.0	37.3	5.0
Prop In Lane				0.93		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				369	0	302	182	1228	0	0	1228	961
V/C Ratio(X)				0.27	0.00	0.88	0.61	0.55	0.00	0.00	0.83	0.21
Avail Cap(c_a), veh/h				494	0	405	182	1228	0	0	1228	961
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.93	0.93	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				30.0	0.0	34.5	19.6	0.0	0.0	0.0	11.6	6.1
Incr Delay (d2), s/veh				0.4	0.0	15.2	13.6	1.6	0.0	0.0	6.7	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.1	0.0	7.7	3.4	0.6	0.0	0.0	21.0	2.1
LnGrp Delay(d), s/veh				30.3	0.0	49.7	33.2	1.6	0.0	0.0	18.3	6.6
LnGrp LOS				C		D	C	A			B	A
Approach Vol, veh/h					365			785			1225	
Approach Delay, s/veh					44.4			6.1			16.3	
Approach LOS					D			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		65.3				65.3		24.7
Change Period (Y+Rc), s		6.0				6.0		6.0
Max Green Setting (Gmax), s		53.0				53.0		25.0
Max Q Clear Time (g_c+I1), s		61.3				39.3		17.8
Green Ext Time (p_c), s		0.0				5.1		0.8

Intersection Summary	
HCM 2010 Ctrl Delay, s/veh	17.3
HCM 2010 LOS	B



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	251	5	170	0	0	0	0	439	62	422	438	0
Future Volume (vph)	251	5	170	0	0	0	0	439	62	422	438	0
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Storage Length (ft)	0		220	0		0	0		90	150		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected		0.953								0.950		
Satd. Flow (prot)	0	1775	1458	0	0	0	0	1863	1458	1630	1863	0
Flt Permitted		0.953								0.455		
Satd. Flow (perm)	0	1775	1458	0	0	0	0	1863	1458	781	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			185						67			
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1076			2120			2339			645	
Travel Time (s)		13.3			26.3			29.0			8.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	273	5	185	0	0	0	0	477	67	459	476	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	278	185	0	0	0	0	477	67	459	476	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1					1	1	1	1	
Detector Template												
Leading Detector (ft)	50	50	50					50	50	50	50	
Trailing Detector (ft)	0	0	0					0	0	0	0	
Detector 1 Position(ft)	0	0	0					0	0	0	0	
Detector 1 Size(ft)	50	50	50					50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Turn Type	Perm	NA	Perm					NA	Perm	Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4		4						2	6		
Detector Phase	4	4	4					2	2	6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0					24.0	24.0	24.0	24.0	
Total Split (s)	24.0	24.0	24.0					66.0	66.0	66.0	66.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	26.7%	26.7%	26.7%					73.3%	73.3%	73.3%	73.3%	
Maximum Green (s)	18.0	18.0	18.0					60.0	60.0	60.0	60.0	
Yellow Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0	6.0					6.0	6.0	6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0					11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0					0	0	0	0	
Act Effct Green (s)		16.9	16.9					61.1	61.1	61.1	61.1	
Actuated g/C Ratio		0.19	0.19					0.68	0.68	0.68	0.68	
v/c Ratio		0.84	0.44					0.38	0.07	0.87	0.38	
Control Delay (s/veh)		57.5	8.5					9.6	3.2	23.4	3.5	
Queue Delay		0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay (s/veh)		57.5	8.5					9.6	3.2	23.4	3.5	
LOS		E	A					A	A	C	A	
Approach Delay (s/veh)		37.9						8.8			13.3	
Approach LOS		D						A			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay (s/veh): 17.9		Intersection LOS: B	
Intersection Capacity Utilization 77.7%		ICU Level of Service D	
Analysis Period (min) 15			

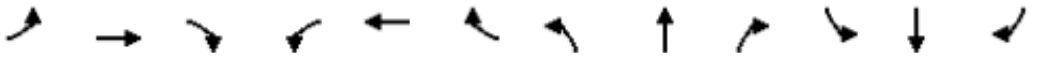
Splits and Phases: 2: Shirk St & SR 138 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	251	5	170	0	0	0	0	439	62	422	438	0
Future Volume (veh/h)	251	5	170	0	0	0	0	439	62	422	438	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1750	1863	1716				0	1863	1716	1716	1863	0
Adj Flow Rate, veh/h	273	5	185				0	477	67	459	476	0
Adj No. of Lanes	0	1	1				0	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	313	6	262				0	1280	1002	538	1280	0
Arrive On Green	0.18	0.18	0.18				0.00	0.69	0.69	1.00	1.00	0.00
Sat Flow, veh/h	1744	32	1458				0	1863	1458	791	1863	0
Grp Volume(v), veh/h	278	0	185				0	477	67	459	476	0
Grp Sat Flow(s),veh/h/ln	1776	0	1458				0	1863	1458	791	1863	0
Q Serve(g_s), s	13.7	0.0	10.7				0.0	9.7	1.4	52.2	0.0	0.0
Cycle Q Clear(g_c), s	13.7	0.0	10.7				0.0	9.7	1.4	61.8	0.0	0.0
Prop In Lane	0.98		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	319	0	262				0	1280	1002	538	1280	0
V/C Ratio(X)	0.87	0.00	0.71				0.00	0.37	0.07	0.85	0.37	0.00
Avail Cap(c_a), veh/h	355	0	292				0	1280	1002	538	1280	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.60	0.60	0.00
Uniform Delay (d), s/veh	35.9	0.0	34.7				0.0	5.9	4.6	4.9	0.0	0.0
Incr Delay (d2), s/veh	19.1	0.0	6.7				0.0	0.8	0.1	10.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	0.0	4.8				0.0	5.2	0.6	12.0	0.2	0.0
LnGrp Delay(d), s/veh	55.0	0.0	41.4				0.0	6.8	4.7	15.0	0.5	0.0
LnGrp LOS	E		D					A	A	B	A	
Approach Vol, veh/h		463						544			935	
Approach Delay, s/veh		49.6						6.5			7.6	
Approach LOS		D						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		67.8		22.2		67.8		
Change Period (Y+Rc), s		6.0		6.0		6.0		
Max Green Setting (Gmax), s		60.0		18.0		60.0		
Max Q Clear Time (g_c+I1), s		11.7		15.7		63.8		
Green Ext Time (p_c), s		2.1		0.4		0.0		

Intersection Summary	
HCM 2010 Ctrl Delay, s/veh	17.3
HCM 2010 LOS	B



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	188	78	37	73	131	44	273	59	301	321	12
Future Volume (vph)	16	188	78	37	73	131	44	273	59	301	321	12
Ideal Flow (vphpl)	1750	1900	1750	1750	1900	1750	1750	1900	1750	1750	1900	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.927			0.979			0.997	
Flt Protected		0.997			0.992			0.994			0.977	
Satd. Flow (prot)	0	1787	0	0	1713	0	0	1813	0	0	1814	0
Flt Permitted		0.958			0.734			0.877			0.665	
Satd. Flow (perm)	0	1717	0	0	1267	0	0	1599	0	0	1235	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			61			22			2	
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1796			2695			2949			2654	
Travel Time (s)		22.3			33.4			36.6			32.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	204	85	40	79	142	48	297	64	327	349	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	306	0	0	261	0	0	409	0	0	689	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11	1.11	1.00	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	50	50		50	50		50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	25.0	25.0		25.0	25.0		65.0	65.0		65.0	65.0	
Total Split (%)	27.8%	27.8%		27.8%	27.8%		72.2%	72.2%		72.2%	72.2%	
Maximum Green (s)	19.0	19.0		19.0	19.0		59.0	59.0		59.0	59.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		17.7			17.7			60.3			60.3	
Actuated g/C Ratio		0.20			0.20			0.67			0.67	
v/c Ratio		0.86			0.88			0.38			0.83	
Control Delay (s/veh)		56.9			56.2			7.7			30.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		56.9			56.2			7.7			30.2	
LOS		E			E			A			C	
Approach Delay (s/veh)		56.9			56.2			7.7			30.2	
Approach LOS		E			E			A			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay (s/veh): 33.6		Intersection LOS: C	
Intersection Capacity Utilization 95.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 5: Shirk St & Walnut Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	188	78	37	73	131	44	273	59	301	321	12
Future Volume (veh/h)	16	188	78	37	73	131	44	273	59	301	321	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1750	1863	1750	1750	1863	1750	1750	1863	1750	1750	1863	1750
Adj Flow Rate, veh/h	17	204	85	40	79	142	48	297	64	327	349	13
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	52	237	95	77	106	164	144	866	179	478	456	17
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.67	0.67	0.67	0.67	0.67	0.67
Sat Flow, veh/h	50	1233	494	160	554	853	148	1283	265	621	675	25
Grp Volume(v), veh/h	306	0	0	261	0	0	409	0	0	689	0	0
Grp Sat Flow(s),veh/h/ln	1777	0	0	1567	0	0	1696	0	0	1322	0	0
Q Serve(g_s), s	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.8	0.0	0.0
Cycle Q Clear(g_c), s	15.0	0.0	0.0	14.5	0.0	0.0	8.5	0.0	0.0	32.3	0.0	0.0
Prop In Lane	0.06		0.28	0.15		0.54	0.12		0.16	0.47		0.02
Lane Grp Cap(c), veh/h	383	0	0	347	0	0	1189	0	0	951	0	0
V/C Ratio(X)	0.80	0.00	0.00	0.75	0.00	0.00	0.34	0.00	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	416	0	0	377	0	0	1189	0	0	951	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	35.5	0.0	0.0	35.0	0.0	0.0	6.1	0.0	0.0	10.1	0.0	0.0
Incr Delay (d2), s/veh	9.8	0.0	0.0	7.7	0.0	0.0	0.8	0.0	0.0	4.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	0.0	0.0	7.0	0.0	0.0	4.5	0.0	0.0	12.8	0.0	0.0
LnGrp Delay(d), s/veh	45.3	0.0	0.0	42.7	0.0	0.0	6.9	0.0	0.0	14.9	0.0	0.0
LnGrp LOS	D			D			A			B		
Approach Vol, veh/h		306			261			409			689	
Approach Delay, s/veh		45.3			42.7			6.9			14.9	
Approach LOS		D			D			A			B	

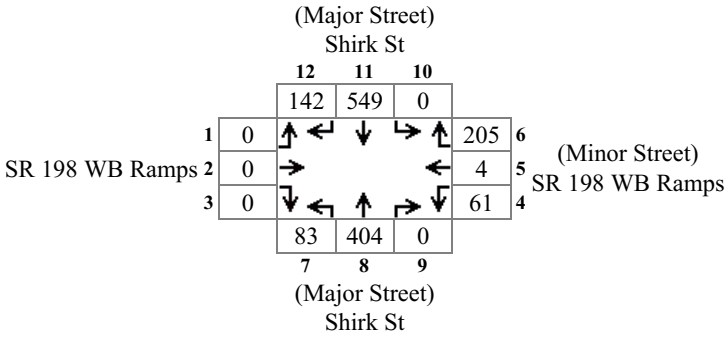
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		66.7		23.3		66.7		23.3
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		59.0		19.0		59.0		19.0
Max Q Clear Time (g_c+I1), s		10.5		17.0		34.3		16.5
Green Ext Time (p_c), s		1.7		0.2		3.6		0.2

Intersection Summary	
HCM 2010 Ctrl Delay, s/veh	22.9
HCM 2010 LOS	C

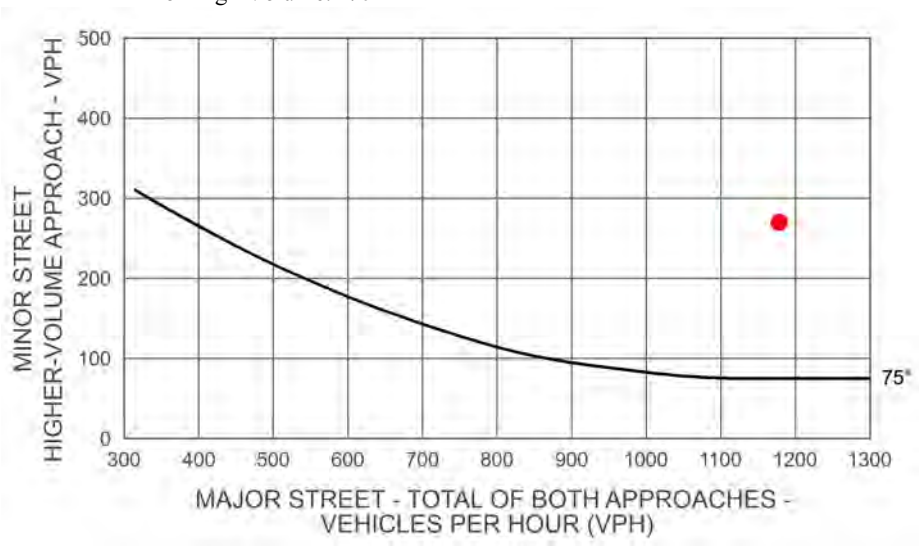
Intersection 1
Shirk St & SR 198 WB Ramps

Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: PM Existing
Intersection #: 1

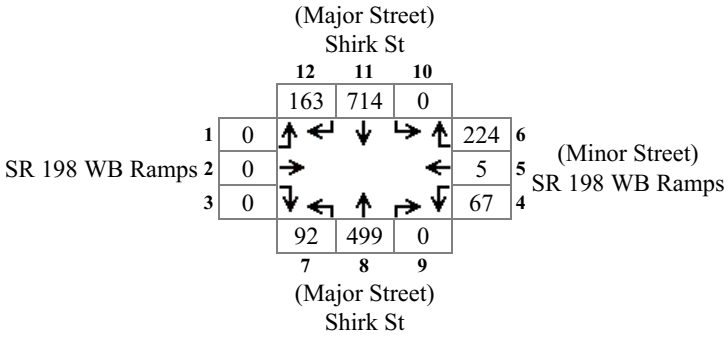


Major Total: 1178
Minor High Volume: 270

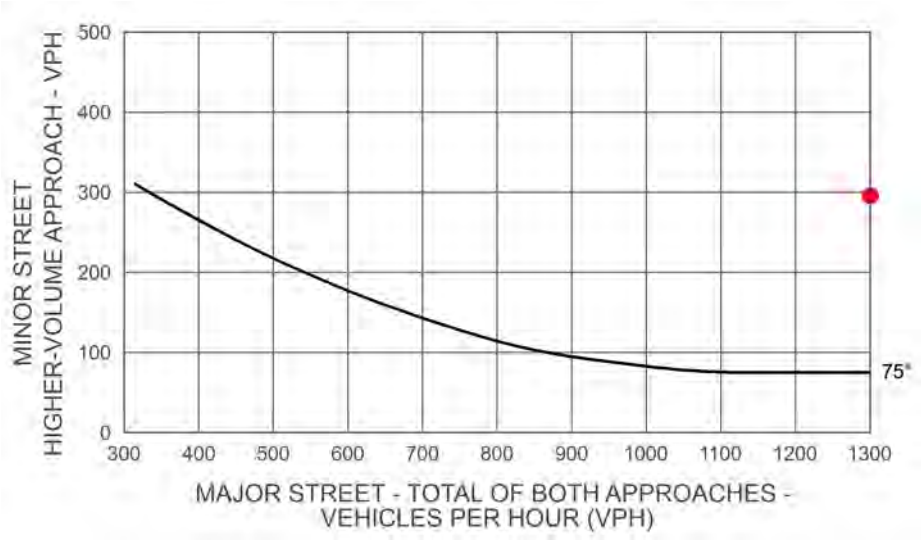


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: PM Future
Intersection #: 1

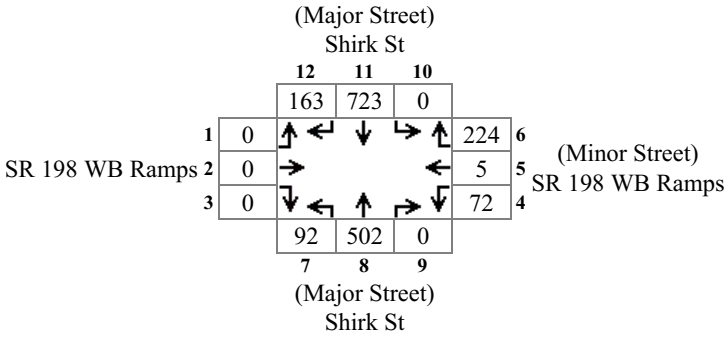


Major Total: 1468
Minor High Volume: 296

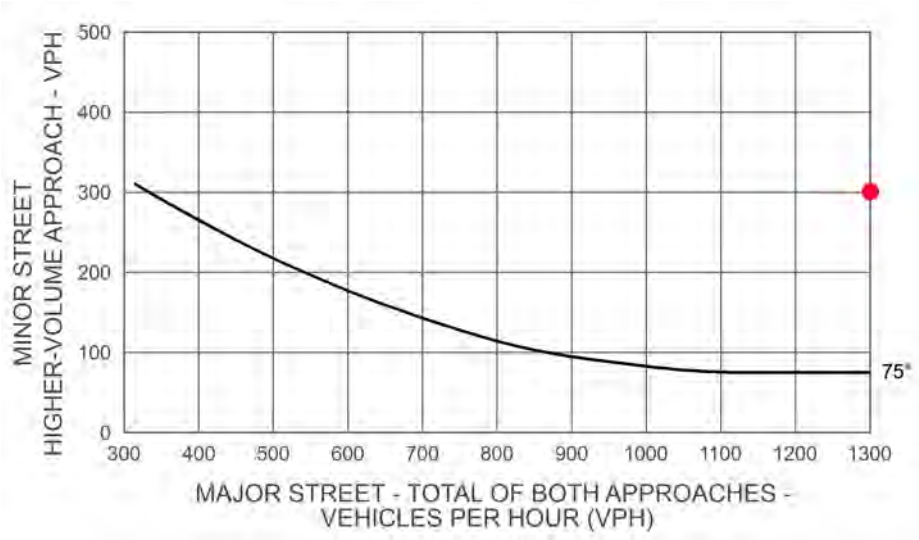


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: PM Future+Project
Intersection #: 1

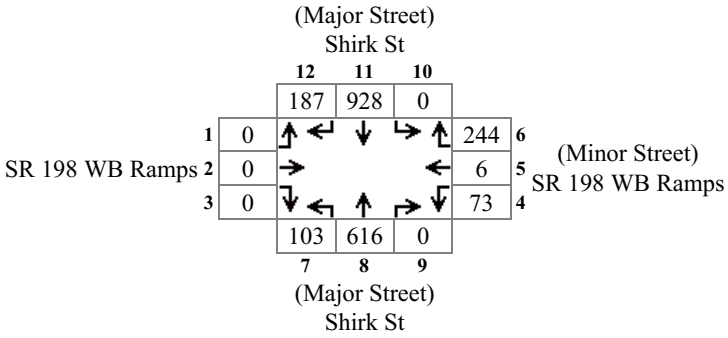


Major Total: 1480
Minor High Volume: 301

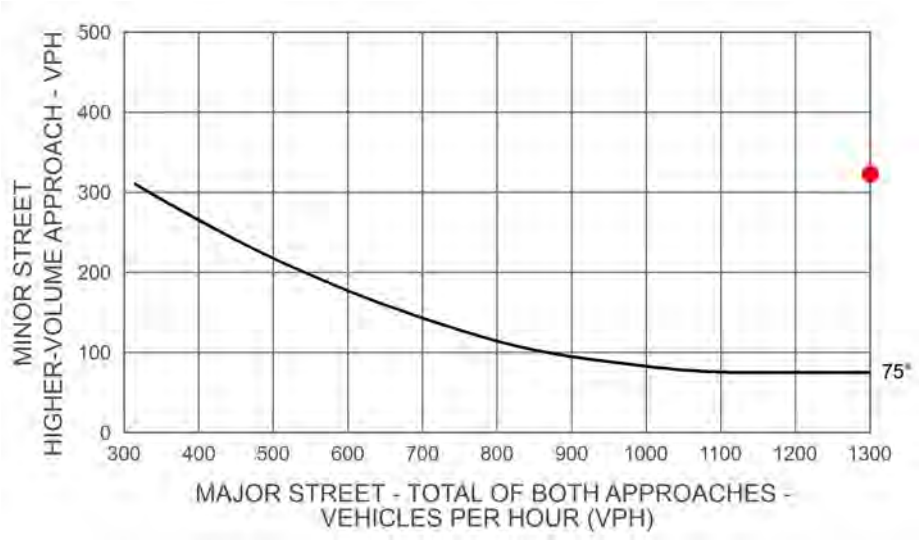


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: PM Future
Intersection #: 1

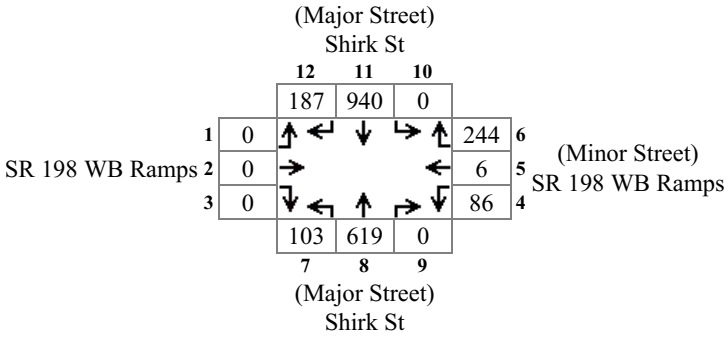


Major Total: 1834
Minor High Volume: 323

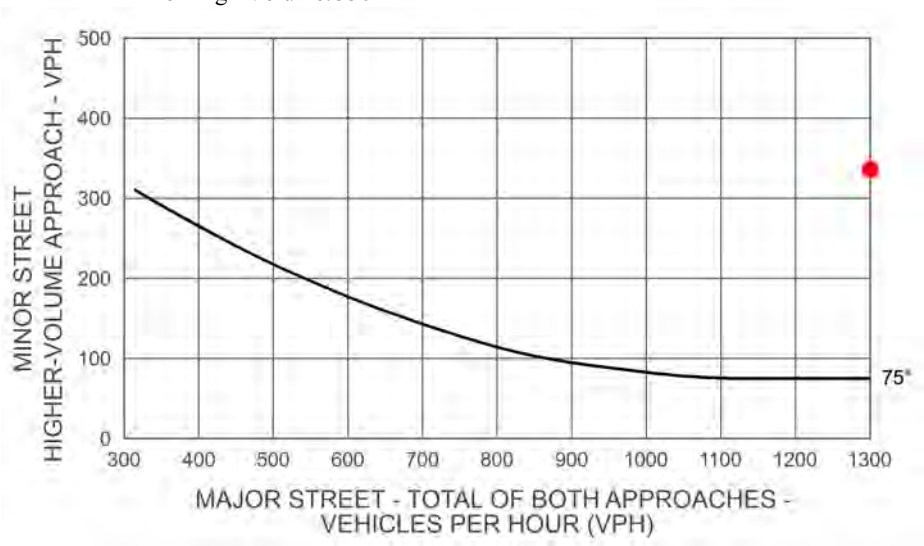


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: PM Future+Project (Future)
Intersection #: 1

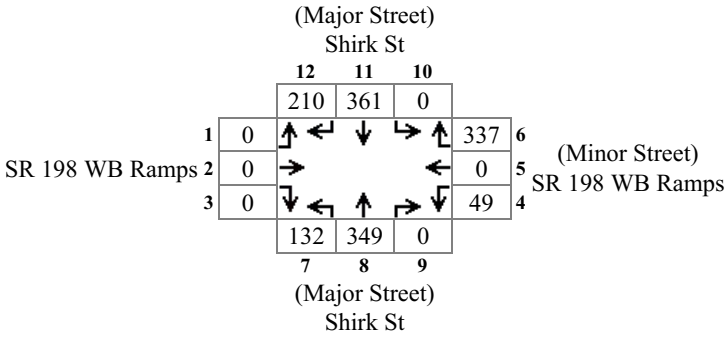


Major Total: 1849
Minor High Volume: 336

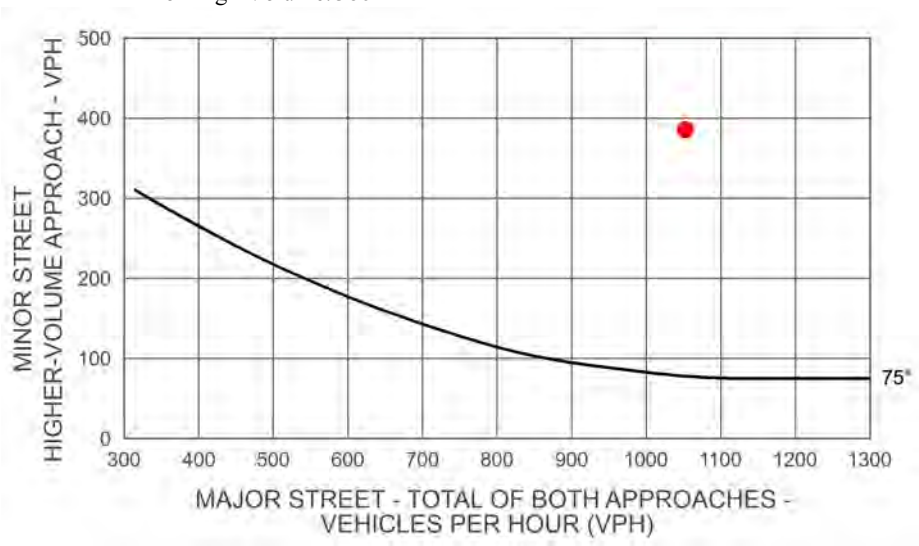


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: AM Existing
Intersection #: 1

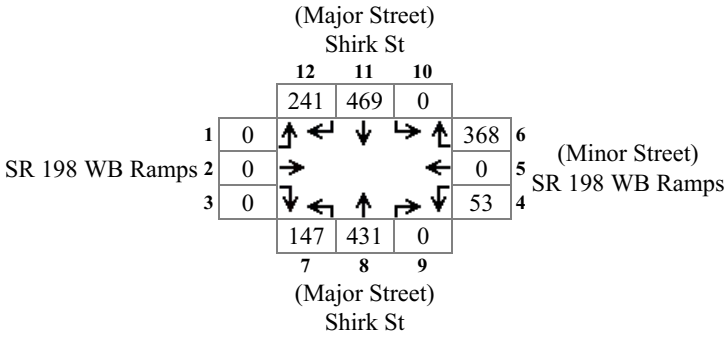


Major Total: 1052
Minor High Volume: 386

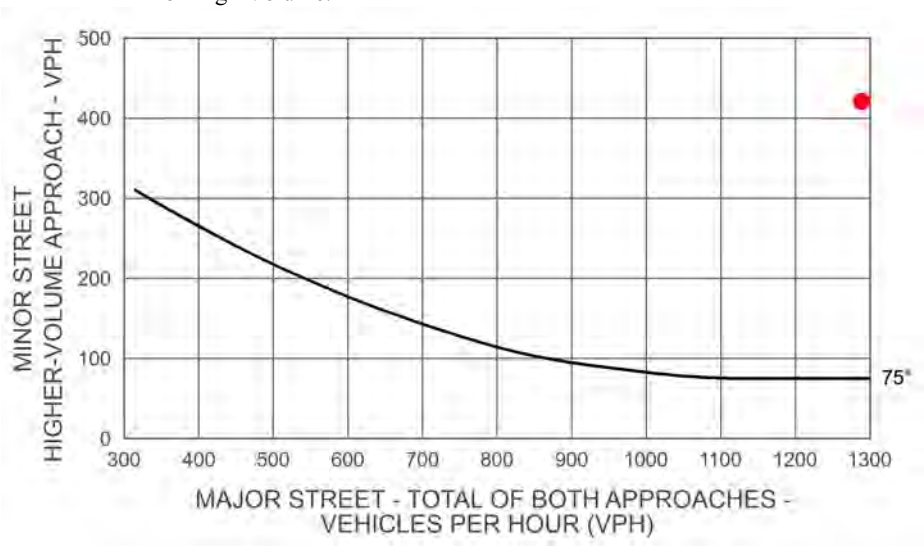


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: AM Future
Intersection #: 1

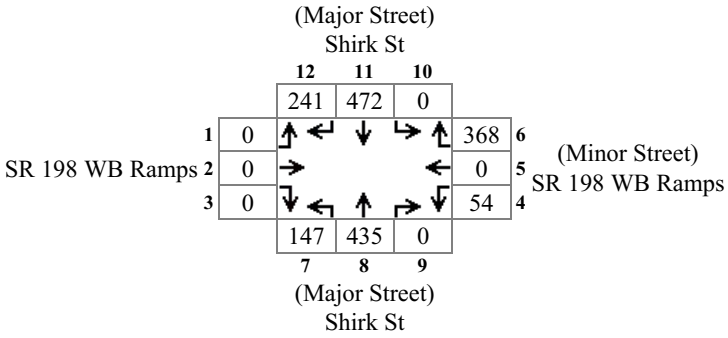


Major Total: 1288
Minor High Volume: 421

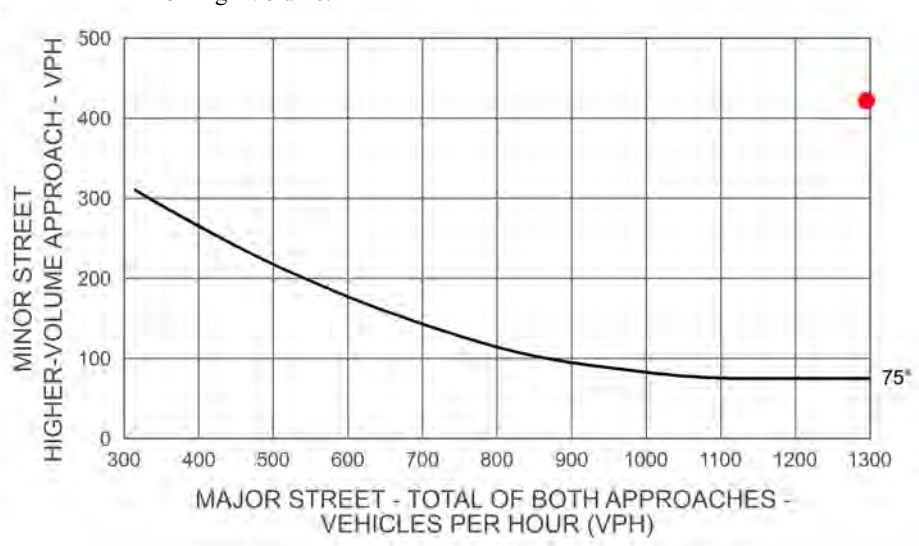


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: AM Future+Project
Intersection #: 1

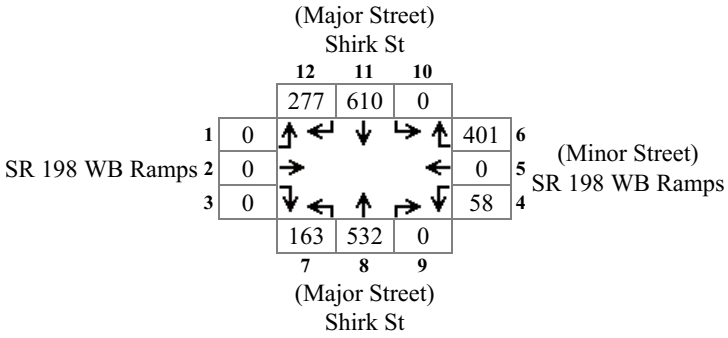


Major Total: 1295
Minor High Volume: 422

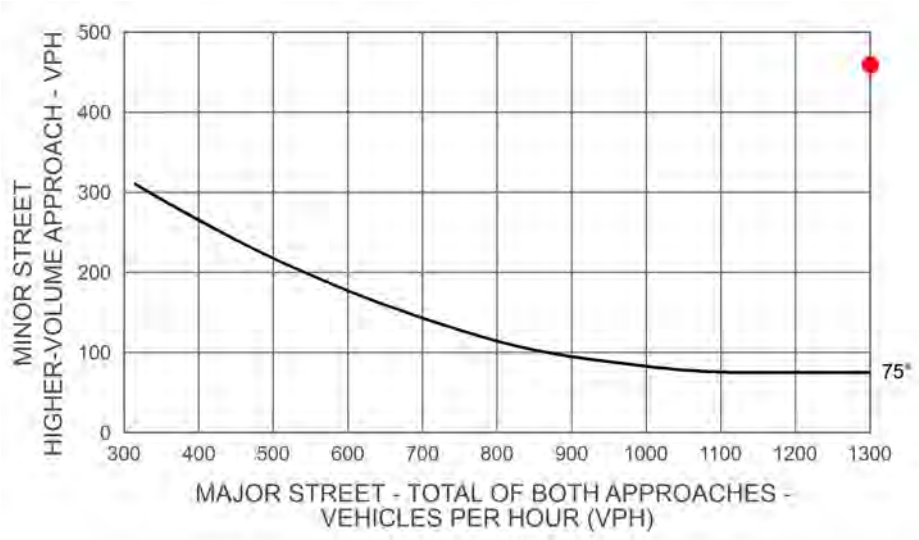


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: AM Future
Intersection #: 1

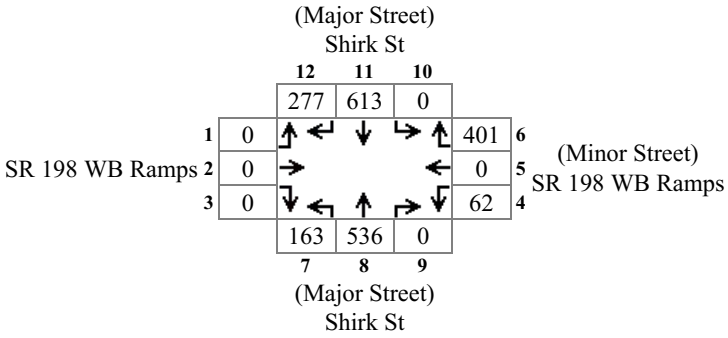


Major Total: 1582
Minor High Volume: 459

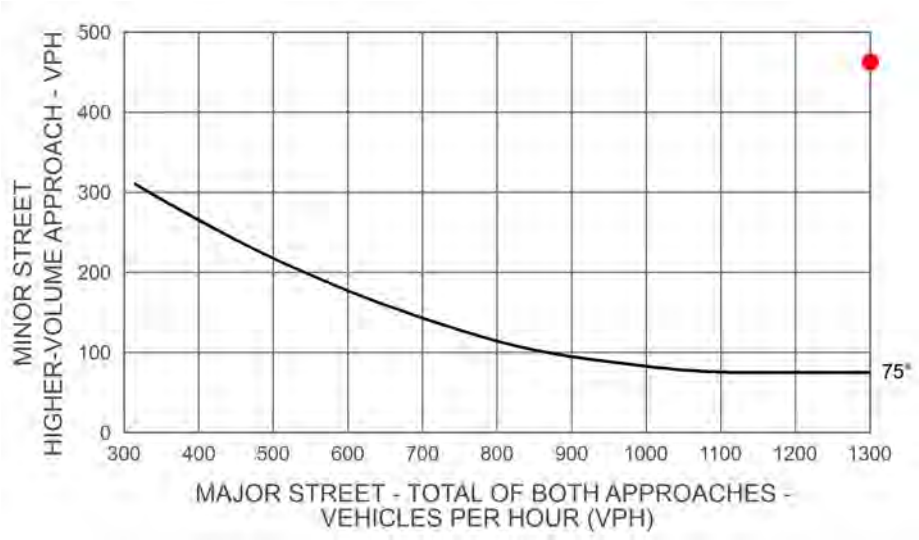


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: AM Future+Project (Future)
Intersection #: 1



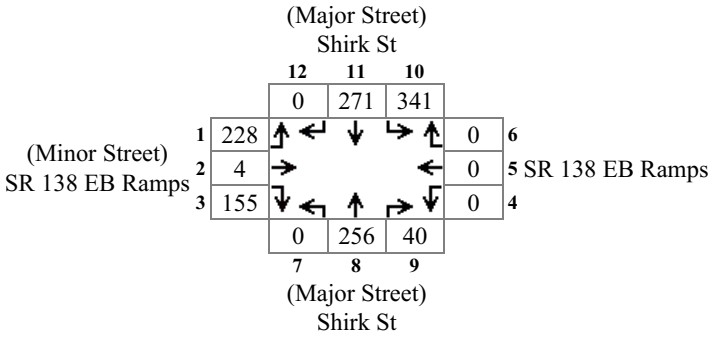
Major Total: 1589
Minor High Volume: 463



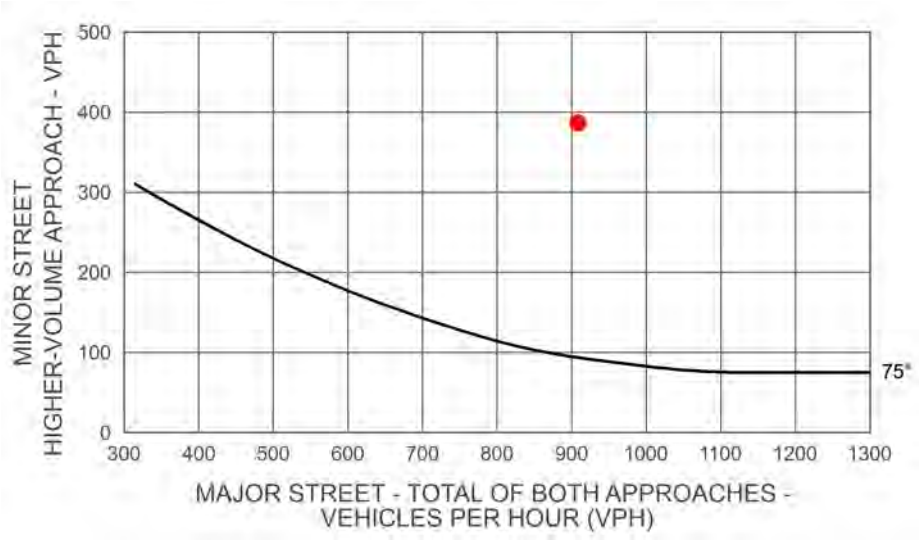
Intersection 2
Shirk St & SR 138 EB Ramps

Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: PM Existing
Intersection #: 2

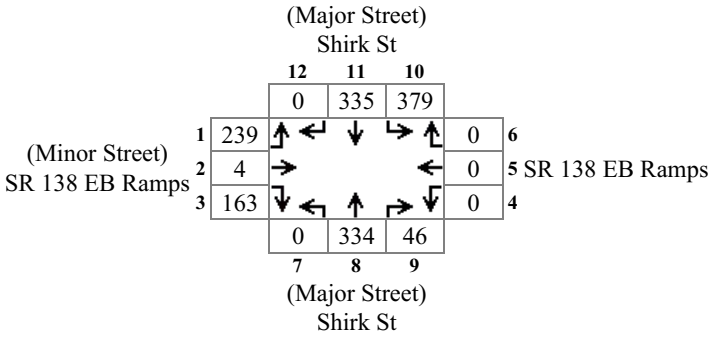


Major Total: 908
Minor High Volume: 387

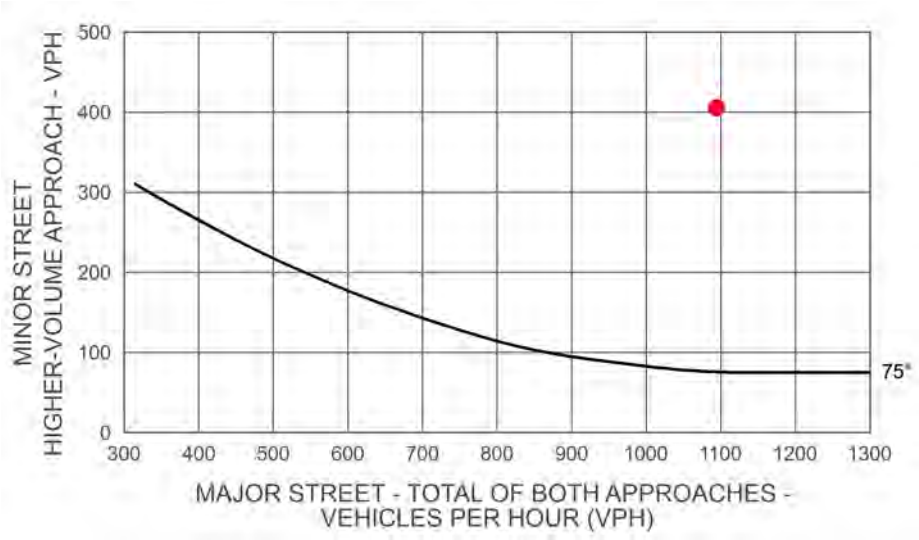


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: PM Future
Intersection #: 2

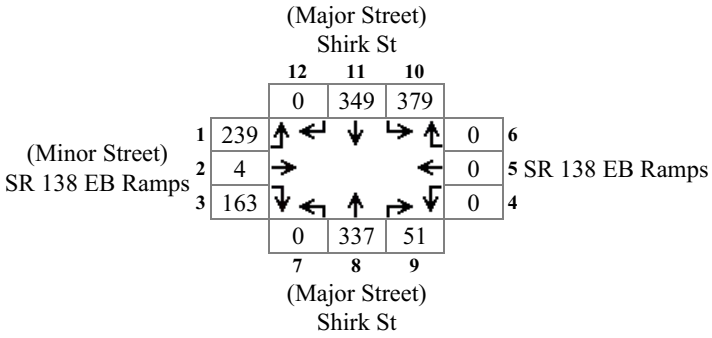


Major Total: 1094
Minor High Volume: 406

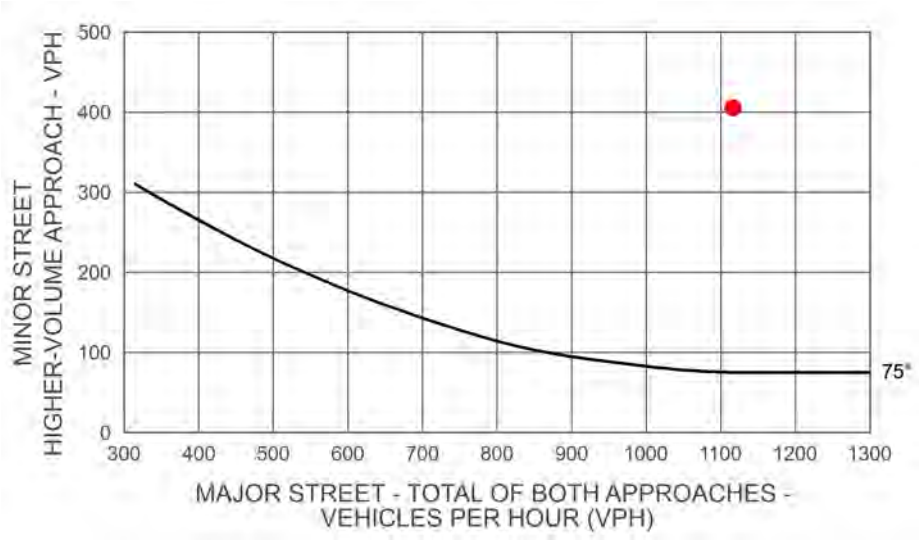


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: PM Future+Project
Intersection #: 2

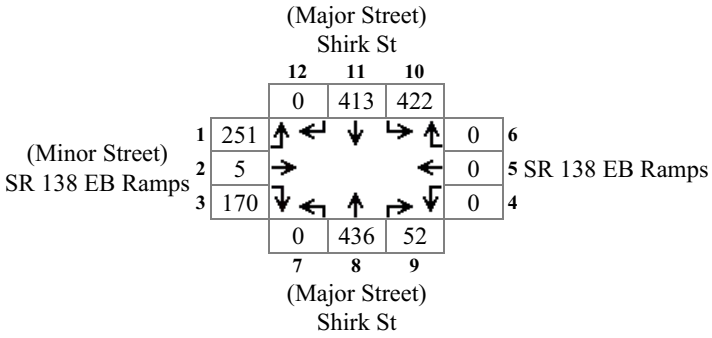


Major Total: 1116
Minor High Volume: 406

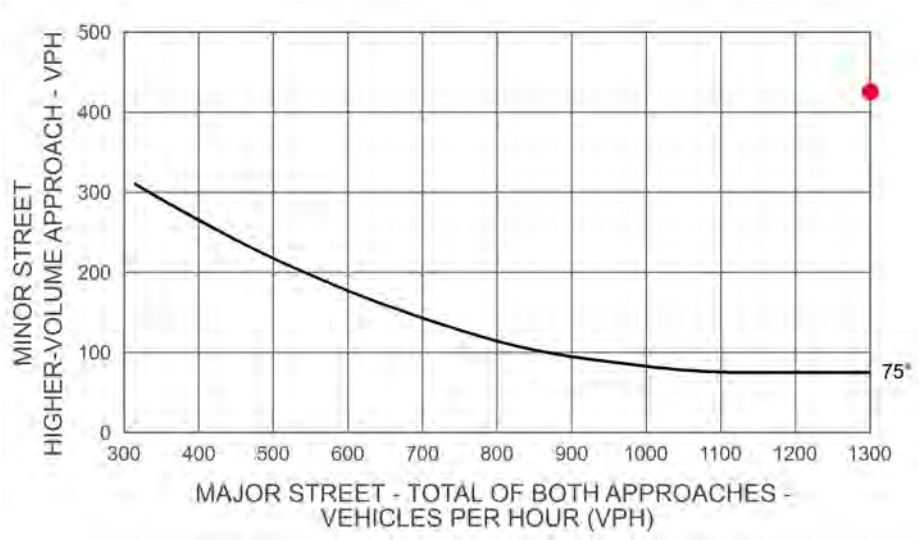


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: PM Future
Intersection #: 2

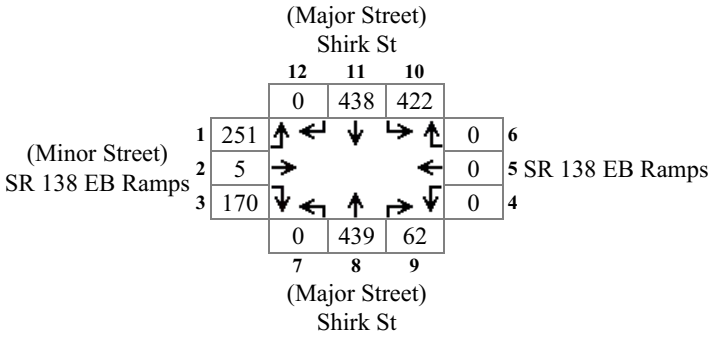


Major Total: 1323
Minor High Volume: 426

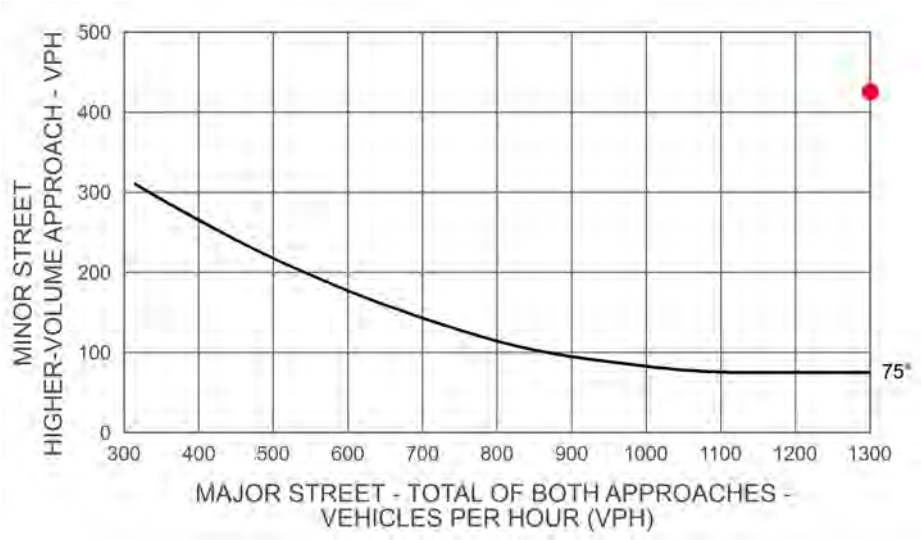


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: PM Future+Project (Future)
Intersection #: 2

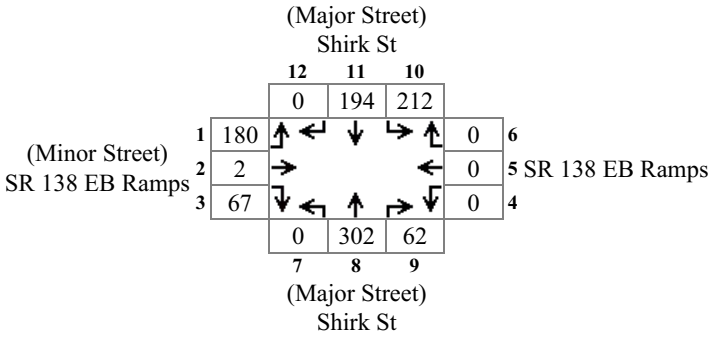


Major Total: 1361
Minor High Volume: 426

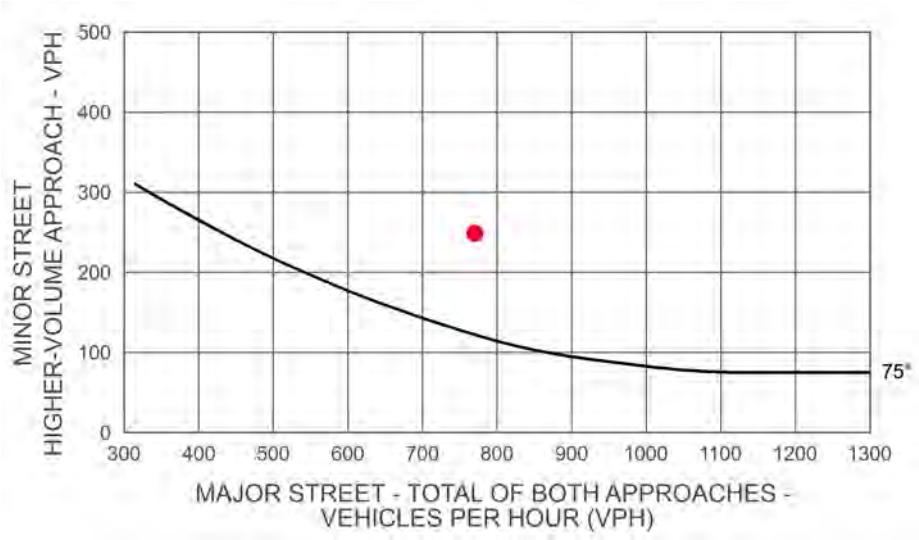


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: AM Existing
Intersection #: 2

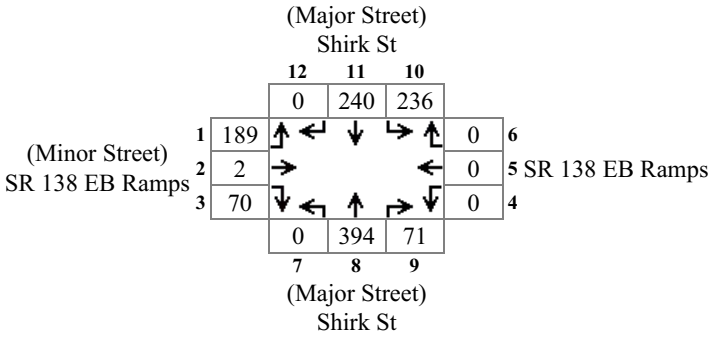


Major Total: 770
Minor High Volume: 249

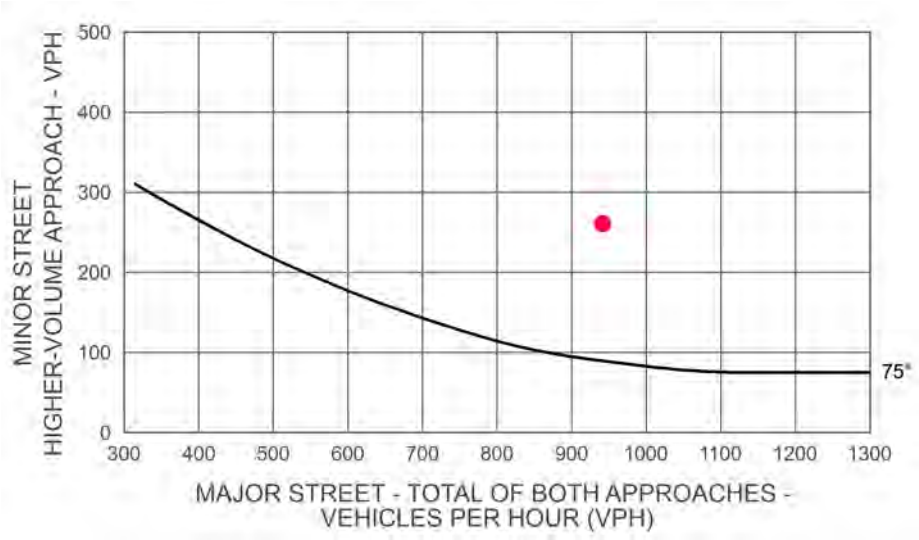


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: AM Future
Intersection #: 2

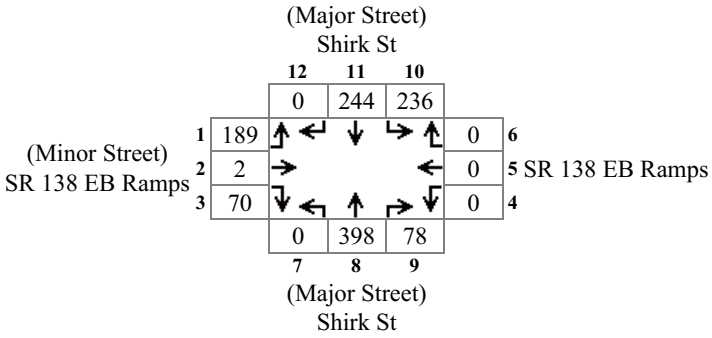


Major Total: 941
Minor High Volume: 261

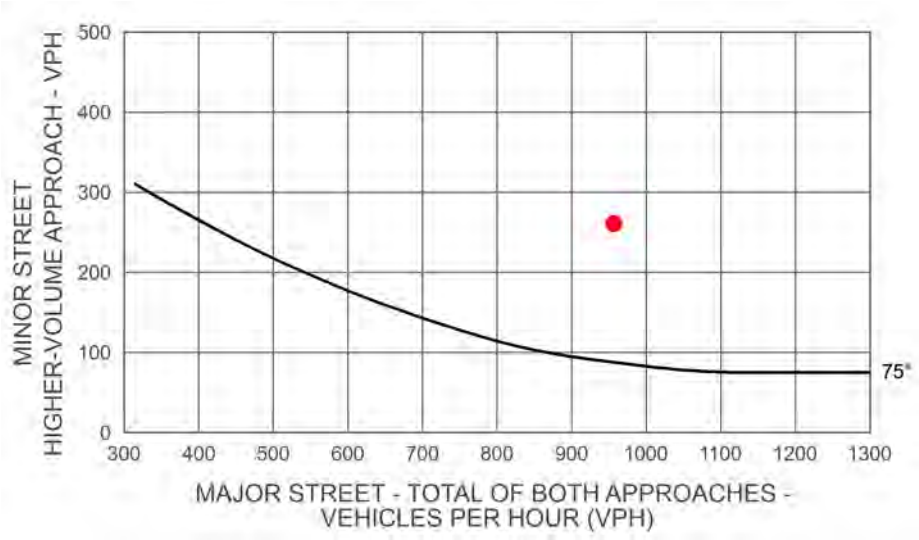


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: AM Future+Project
Intersection #: 2

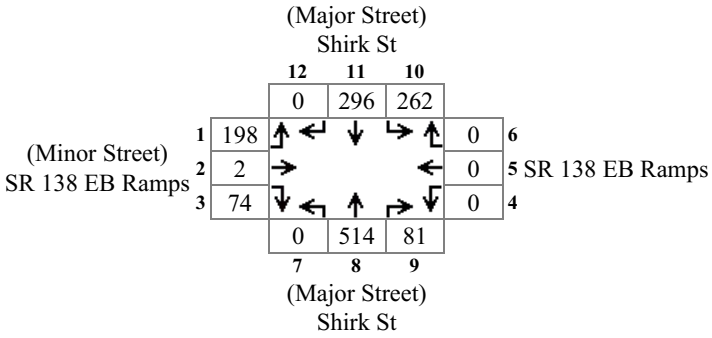


Major Total: 956
Minor High Volume: 261

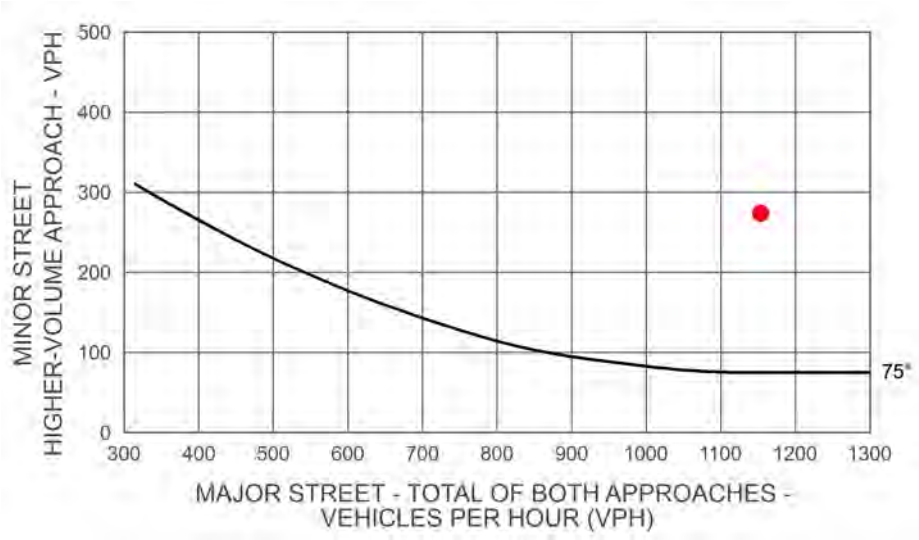


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: AM Future
Intersection #: 2

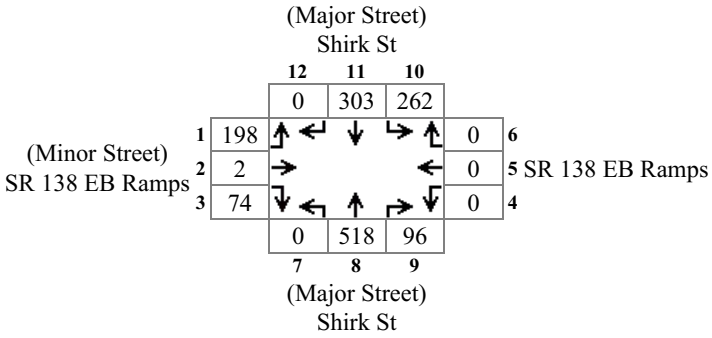


Major Total: 1153
Minor High Volume: 274

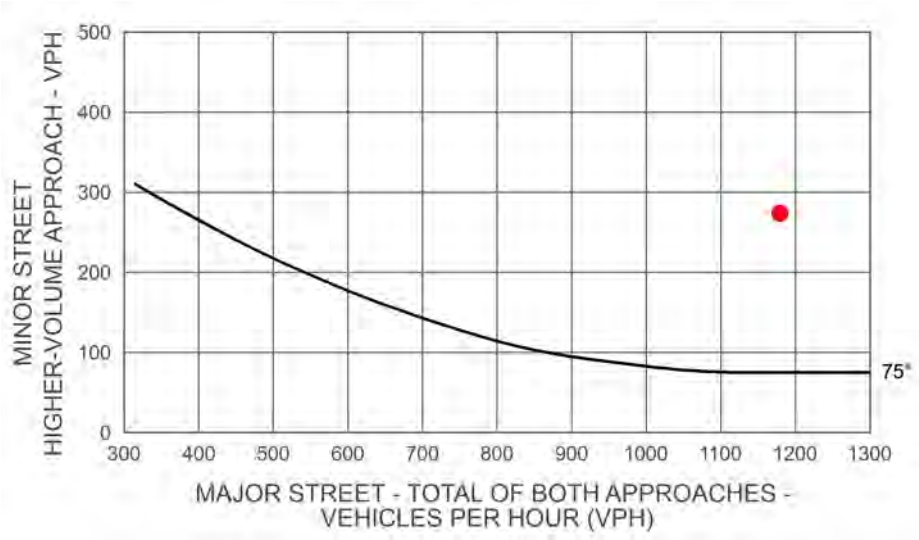


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: AM Future+Project (Future)
Intersection #: 2



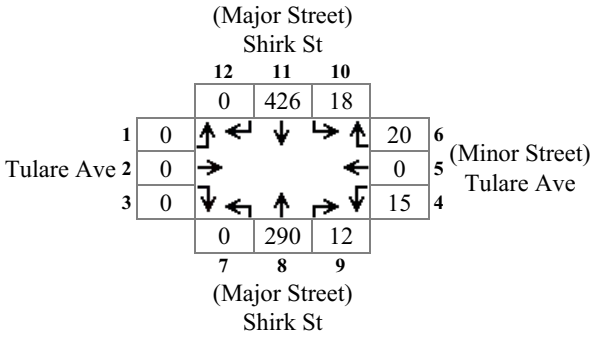
Major Total: 1179
Minor High Volume: 274



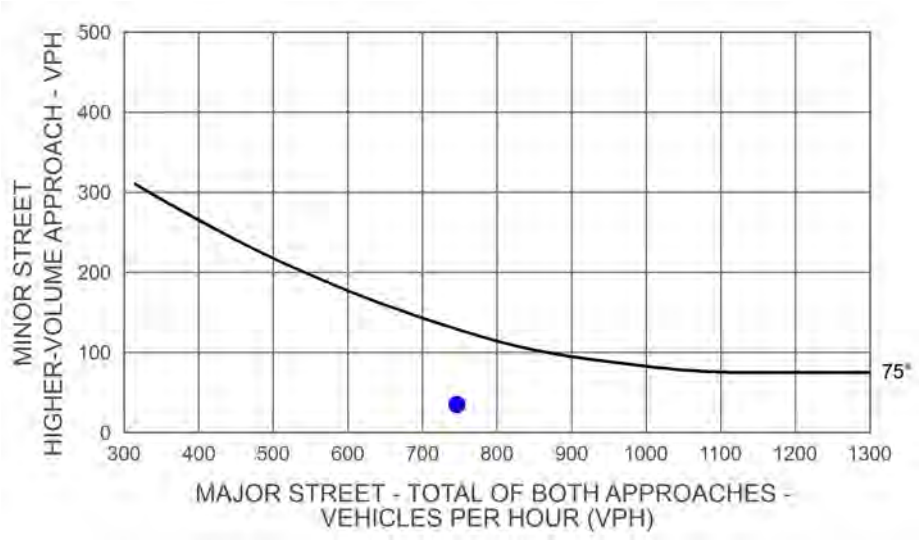
Intersection 3
Shirk St & Tulare Ave

Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 3

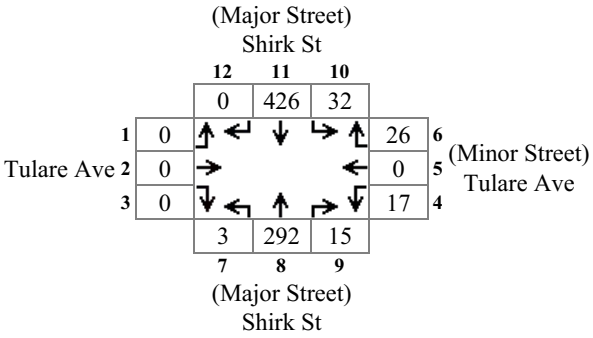


Major Total: 746
Minor High Volume: 35

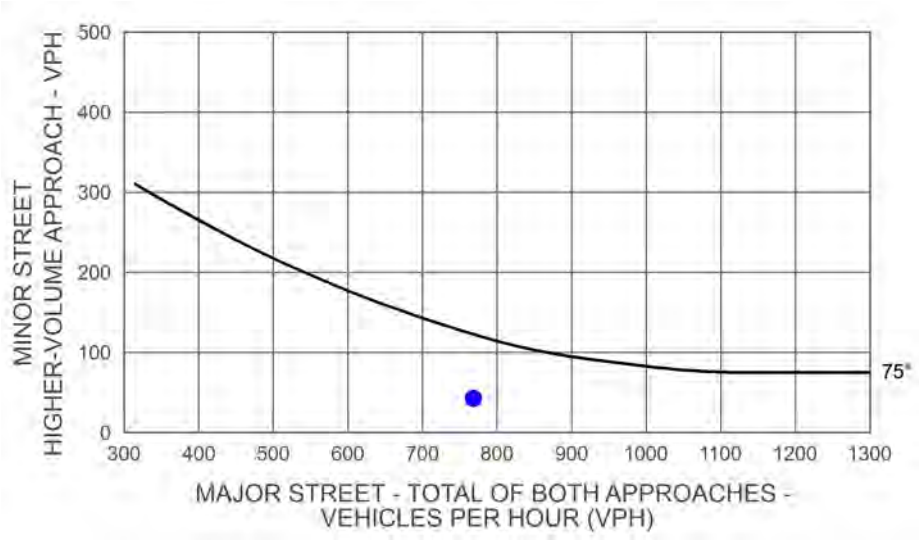


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future+Project
Intersection #: 3

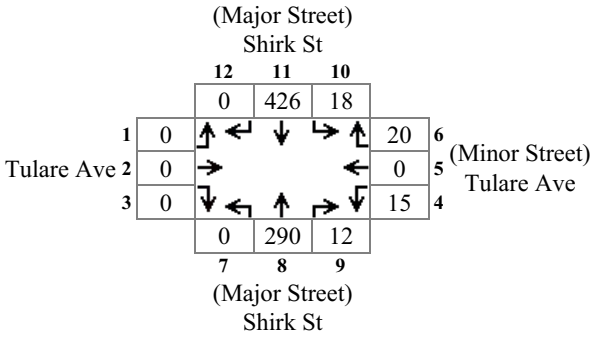


Major Total: 768
Minor High Volume: 43

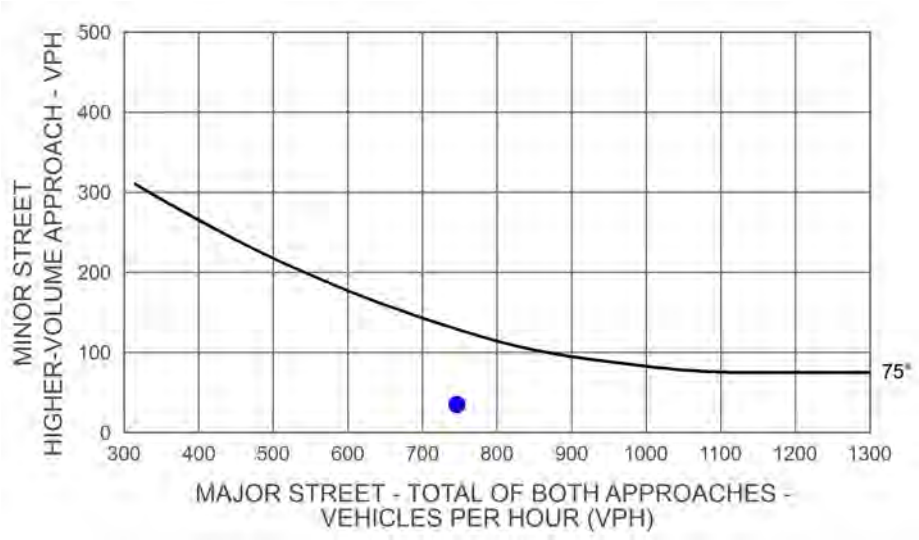


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 3

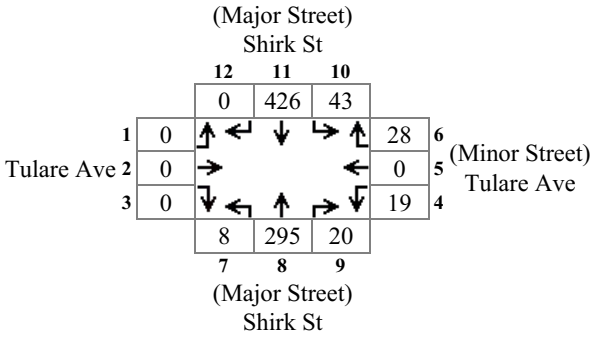


Major Total: 746
Minor High Volume: 35

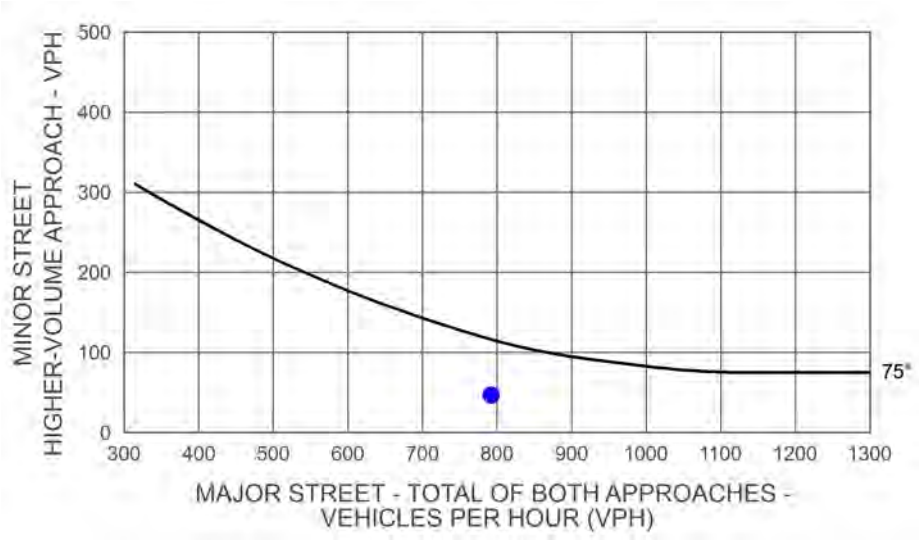


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future+Project (Future)
Intersection #: 3

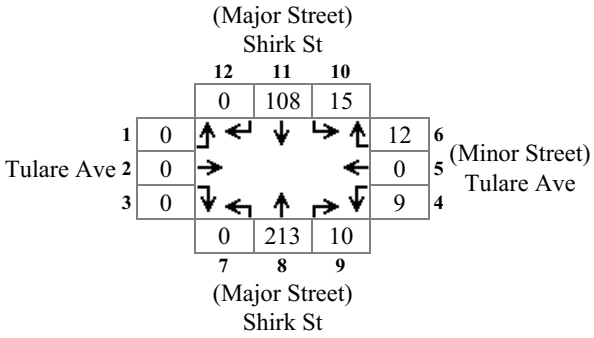


Major Total: 792
Minor High Volume: 47

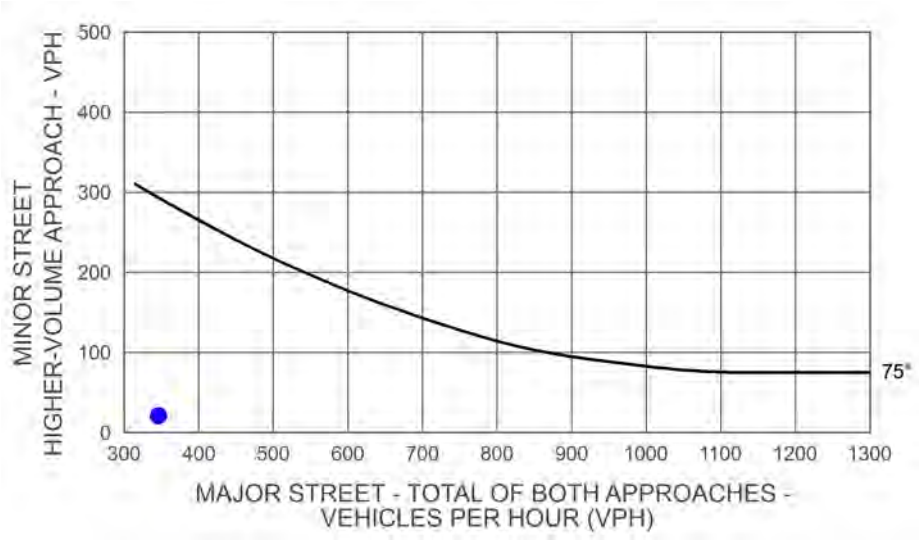


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 3

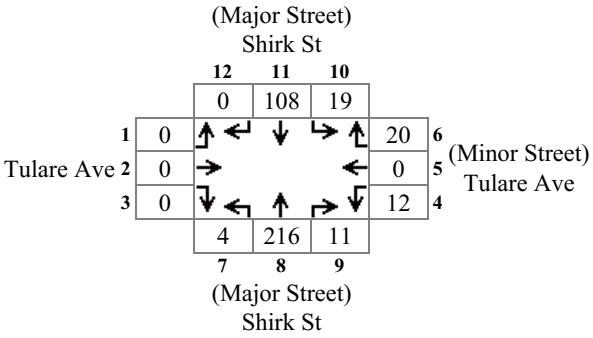


Major Total: 346
Minor High Volume: 21

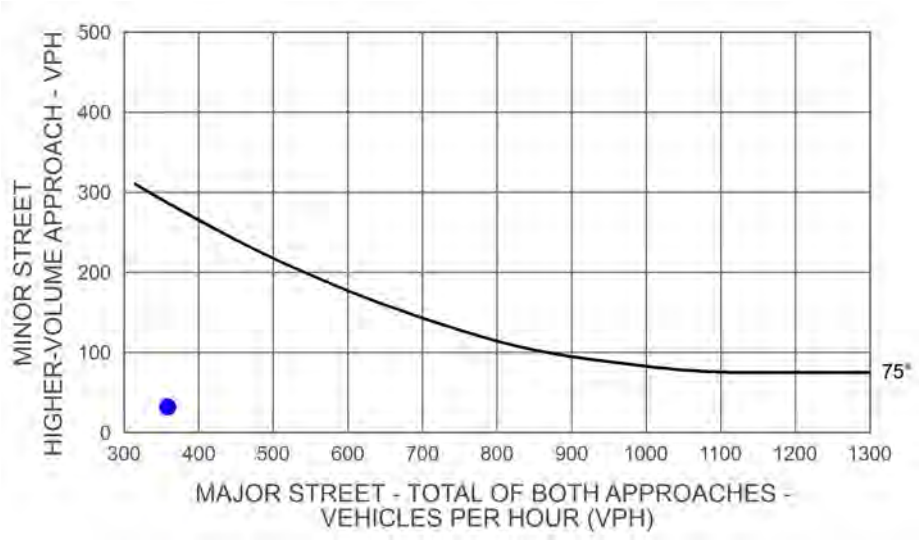


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project
Intersection #: 3

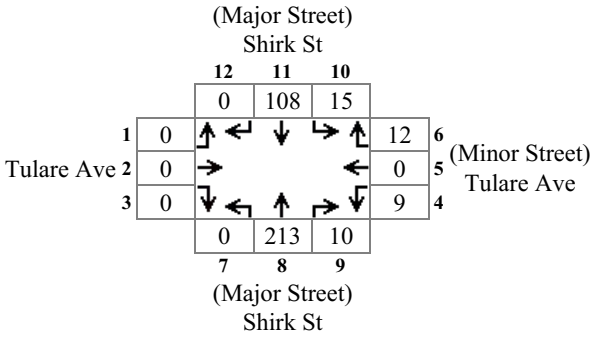


Major Total: 358
Minor High Volume: 32

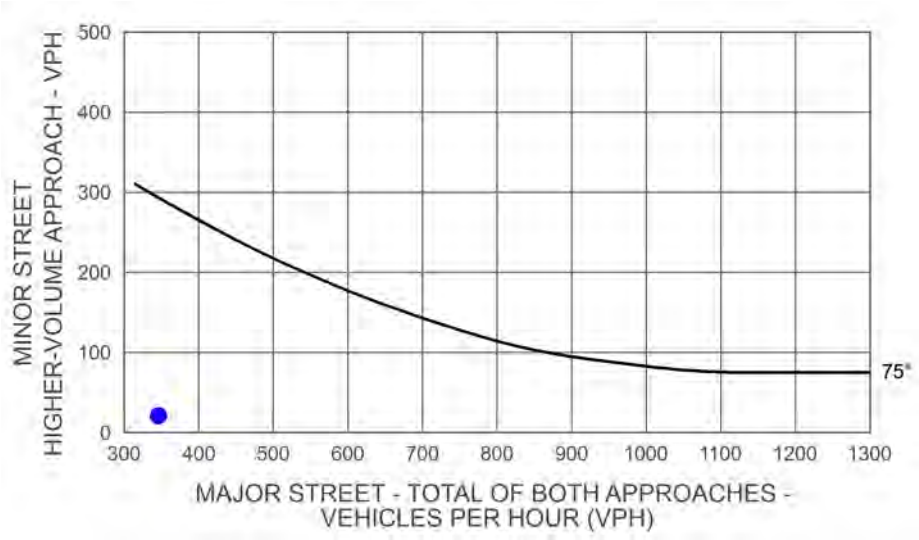


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 3

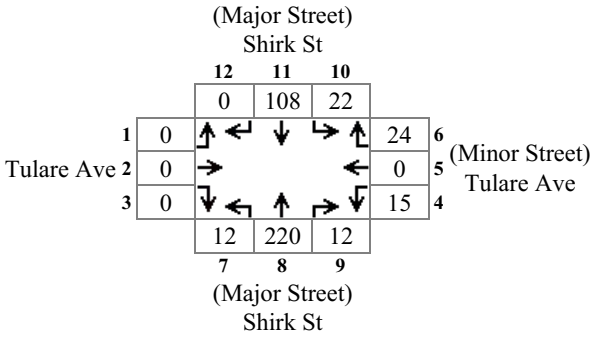


Major Total: 346
Minor High Volume: 21

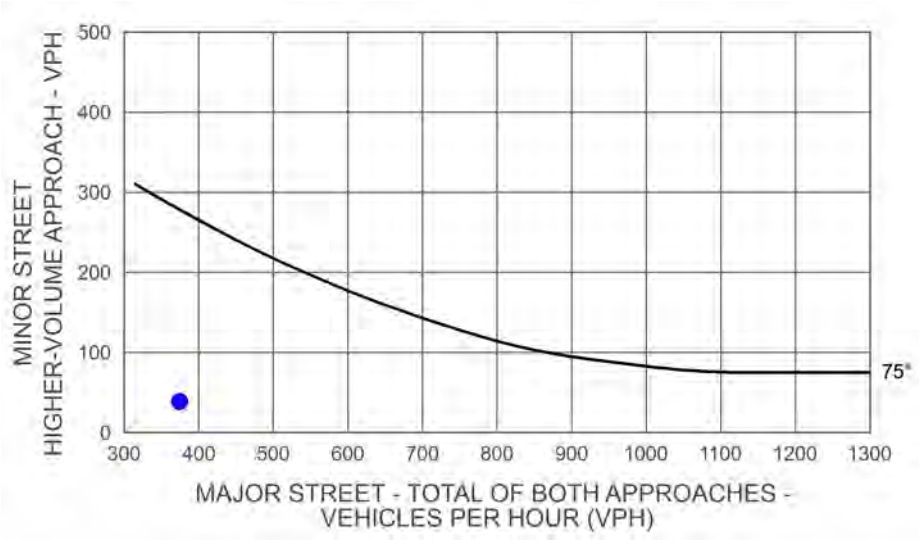


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project (Future)
Intersection #: 3



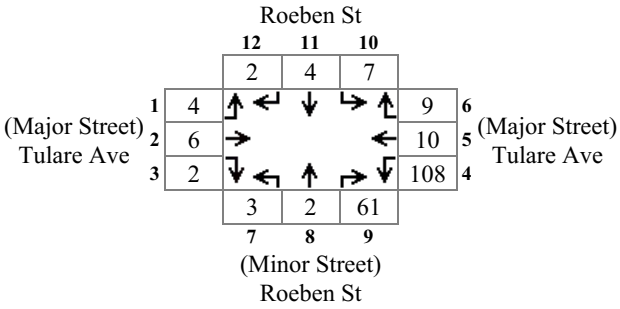
Major Total: 374
Minor High Volume: 39



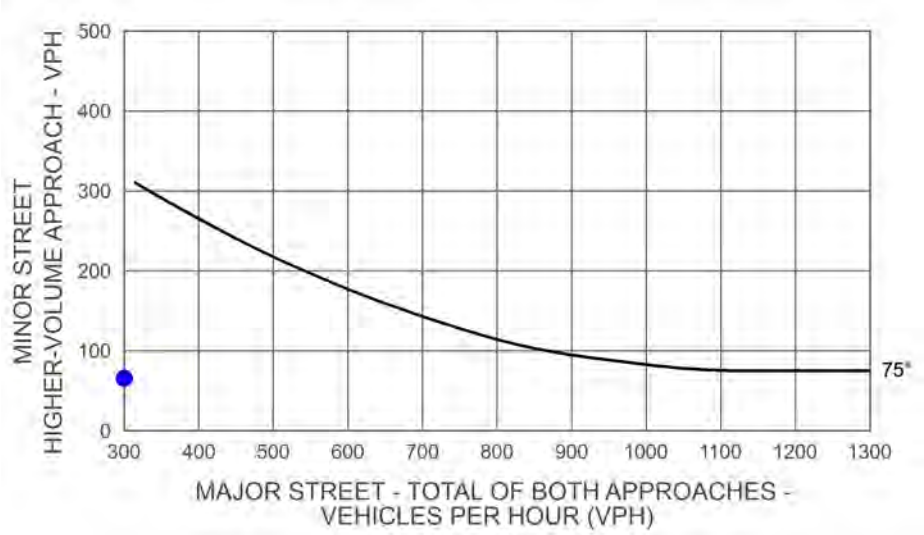
Intersection 4
Roeben St & Tulare Ave

Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Existing
Intersection #: 4

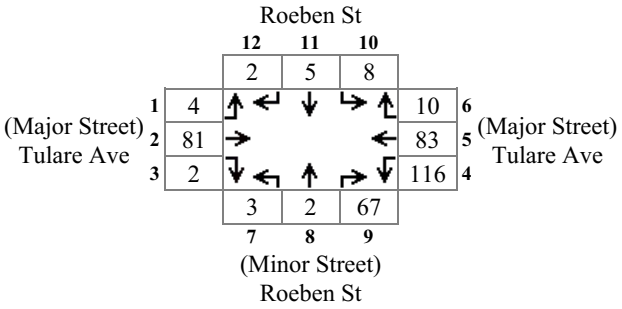


Major Total: 139
Minor High Volume: 66

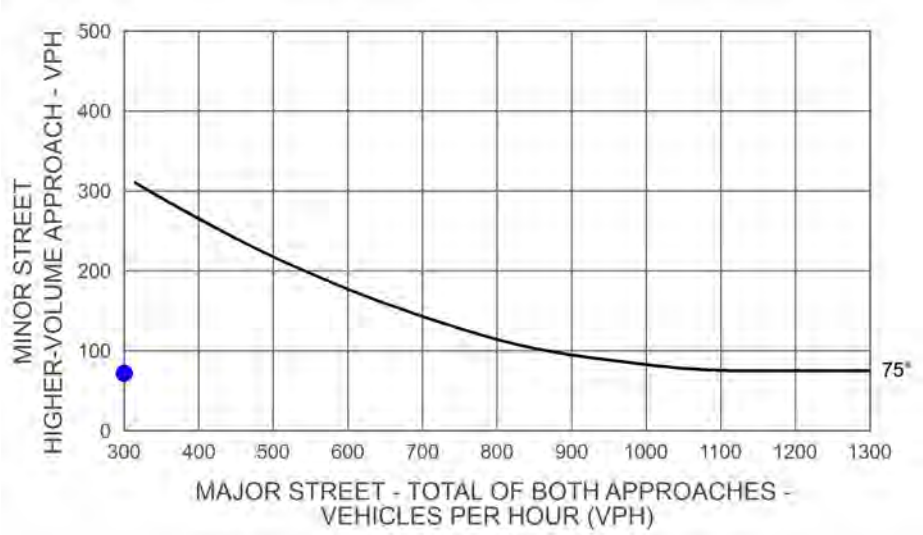


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 4

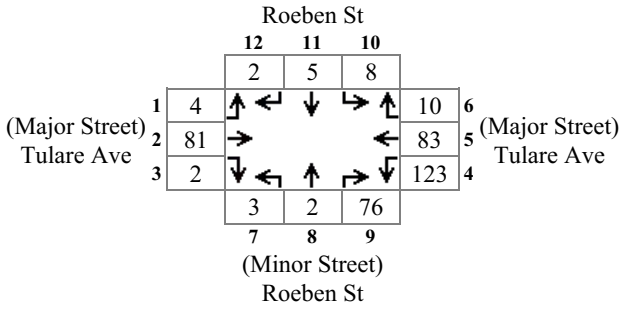


Major Total: 296
Minor High Volume: 72

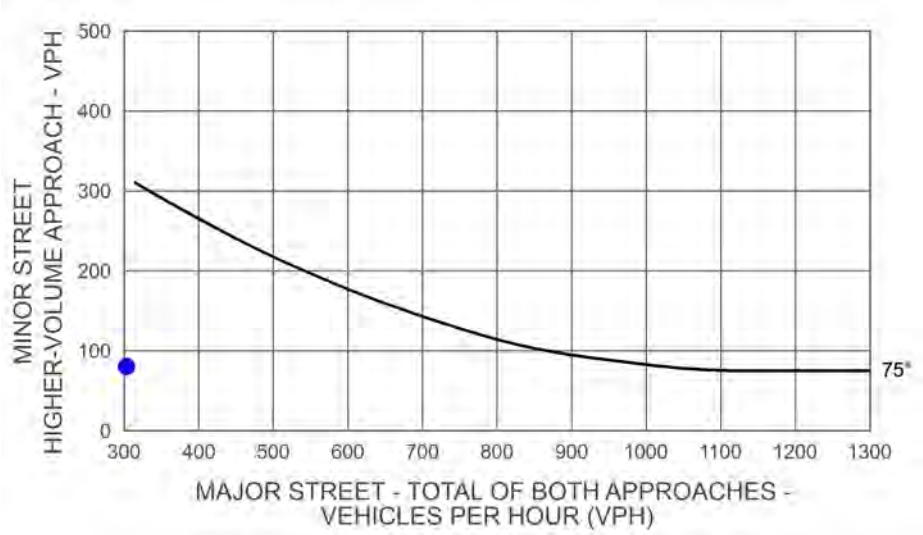


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future+Project
Intersection #: 4

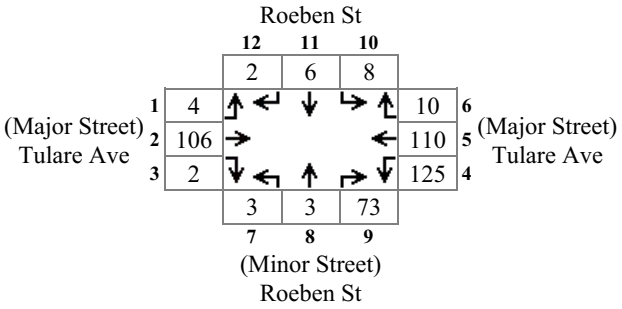


Major Total: 303
Minor High Volume: 81

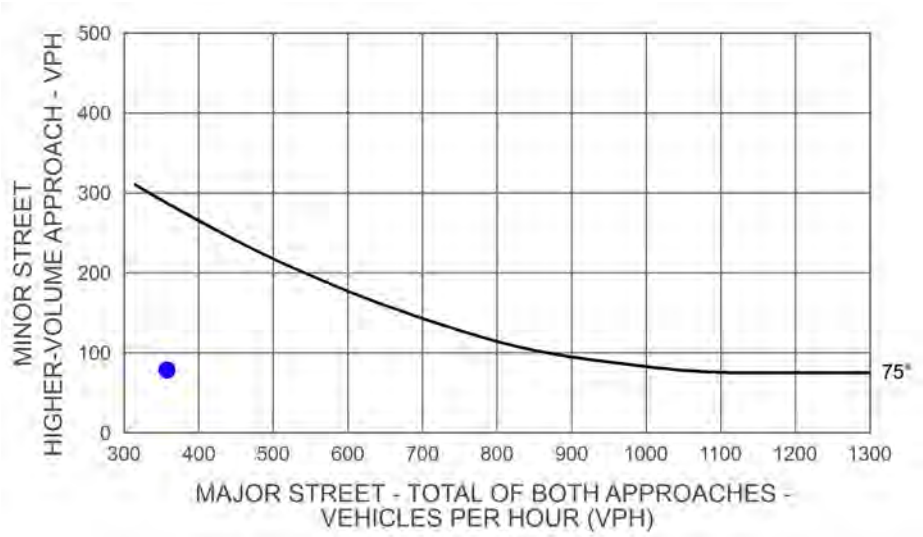


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 4

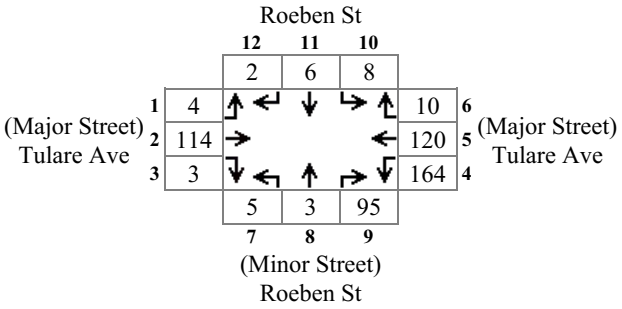


Major Total: 357
Minor High Volume: 79

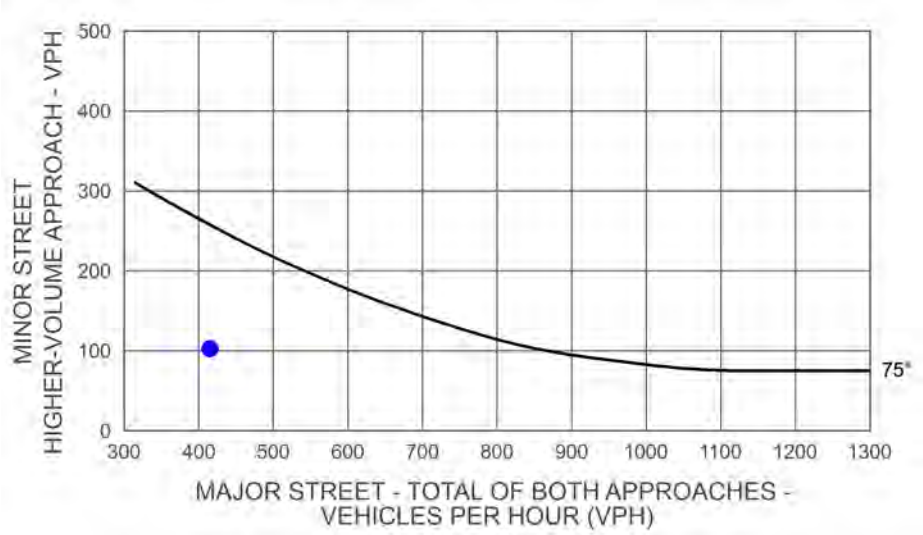


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future+Project (Future)
Intersection #: 4

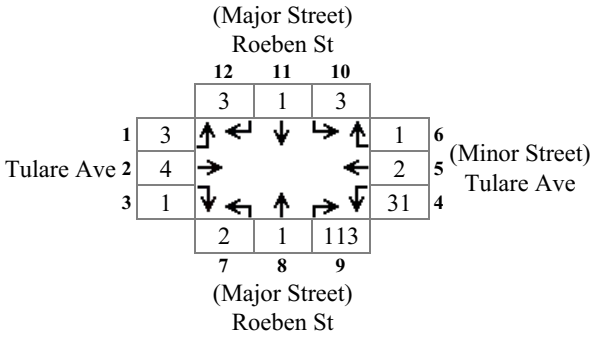


Major Total: 415
Minor High Volume: 103

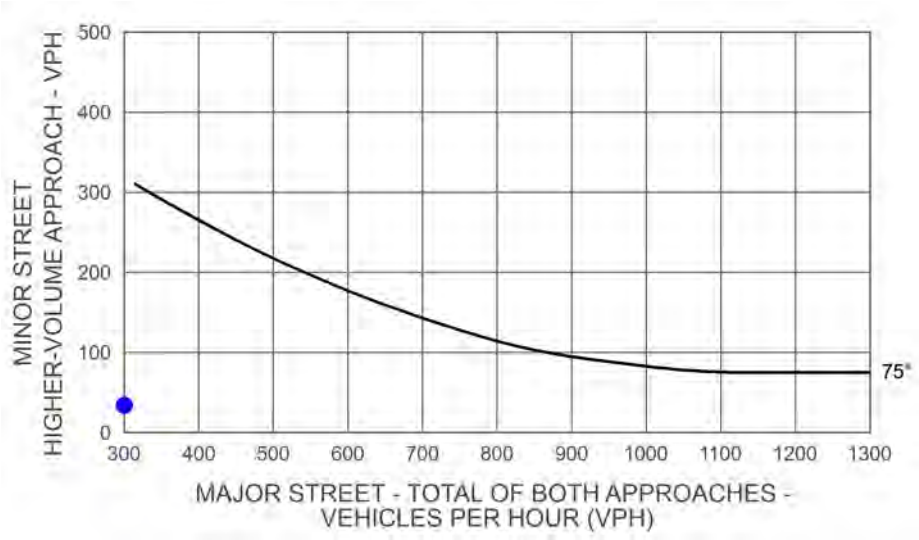


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Existing
Intersection #: 4

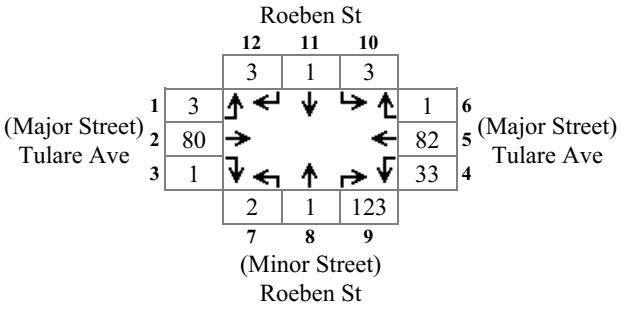


Major Total: 123
Minor High Volume: 34

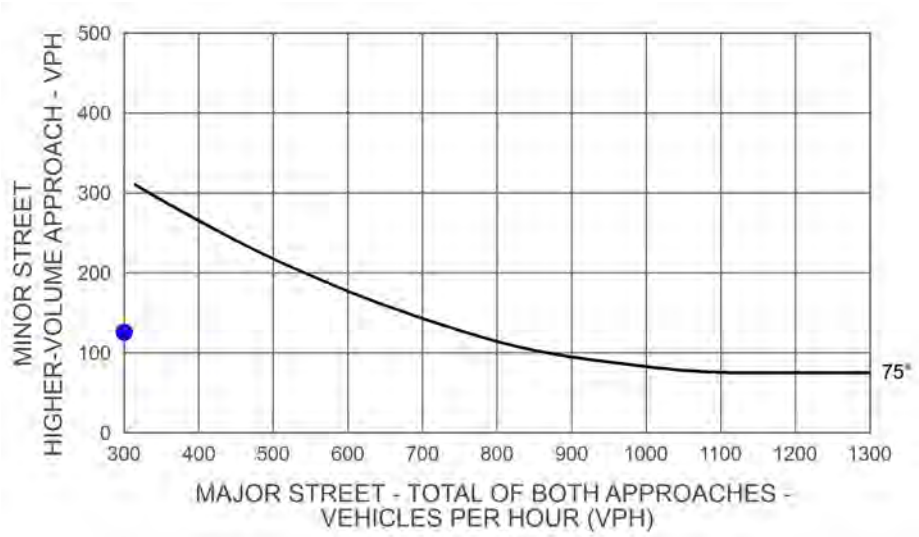


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 4

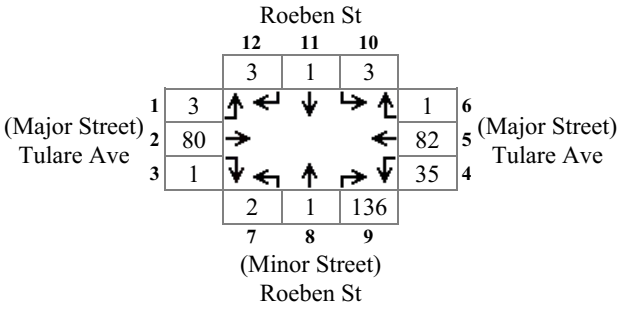


Major Total: 200
Minor High Volume: 126

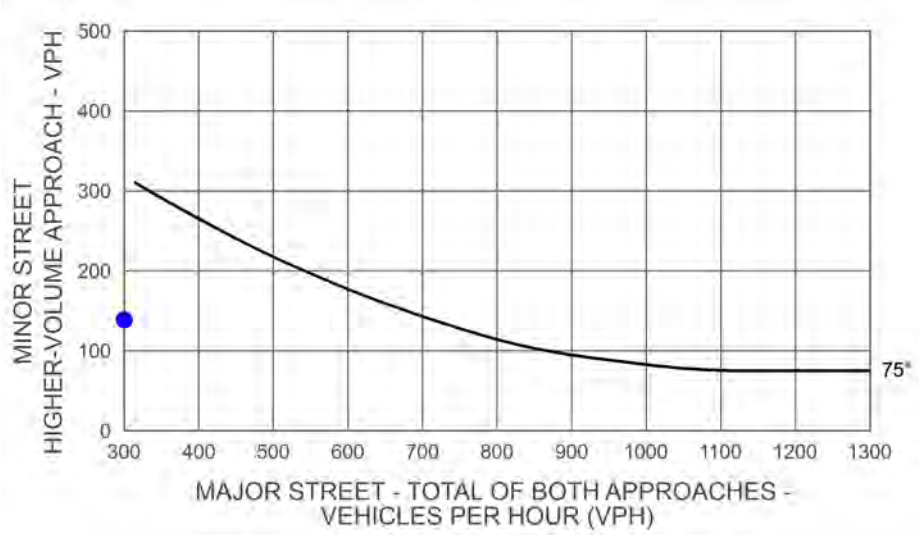


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project
Intersection #: 4

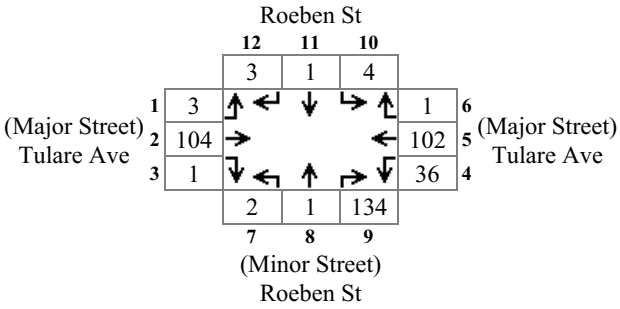


Major Total: 202
Minor High Volume: 139

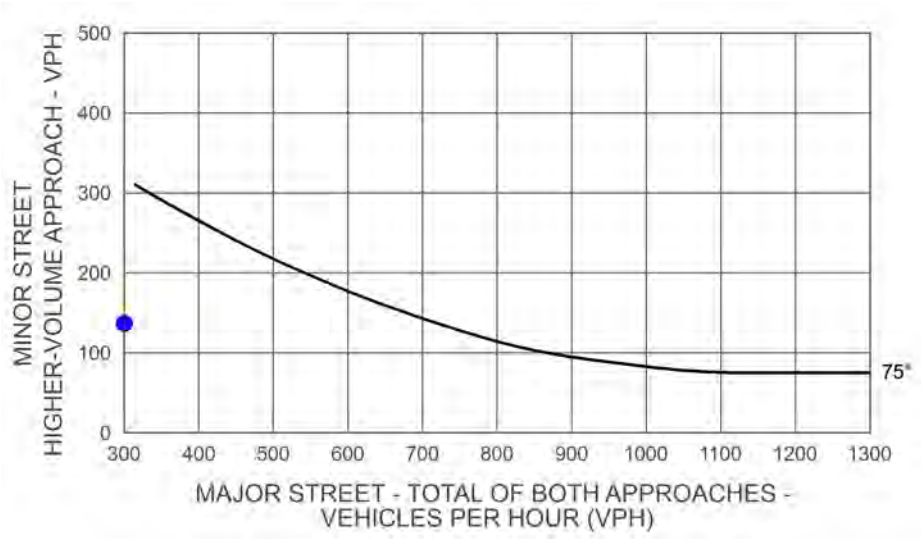


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 4

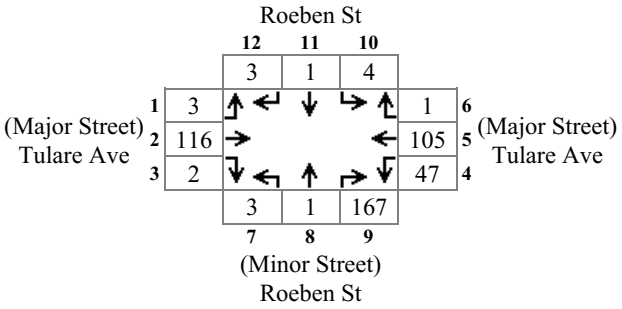


Major Total: 247
Minor High Volume: 137

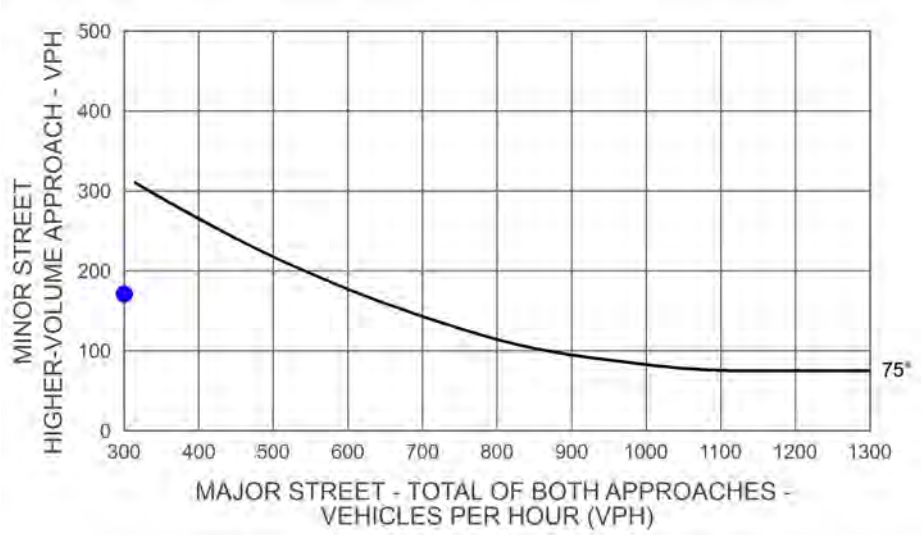


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project (Future)
Intersection #: 4



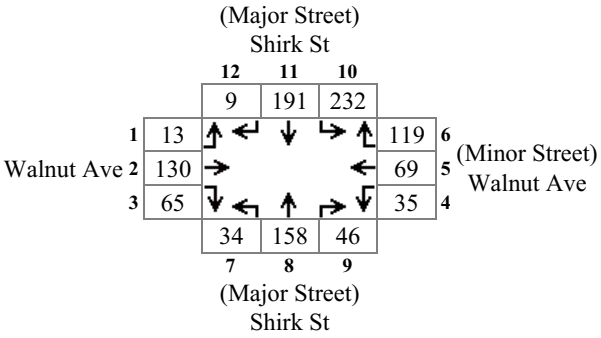
Major Total: 274
Minor High Volume: 171



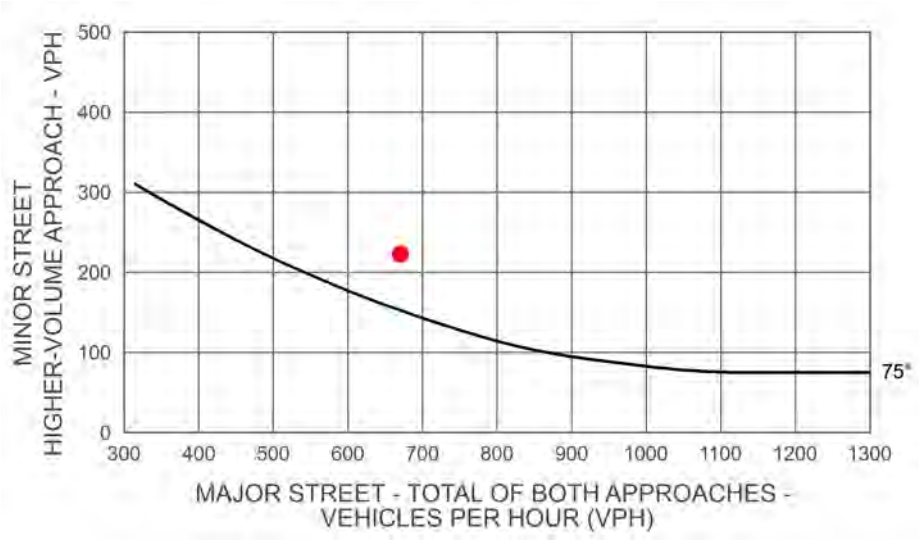
Intersection 5
Shirk St & Walnut Ave

Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: PM Existing
Intersection #: 5

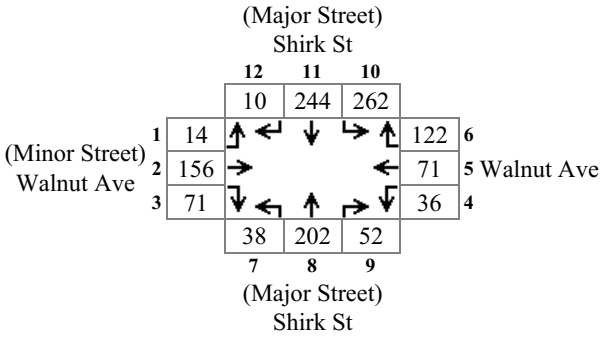


Major Total: 670
Minor High Volume: 223

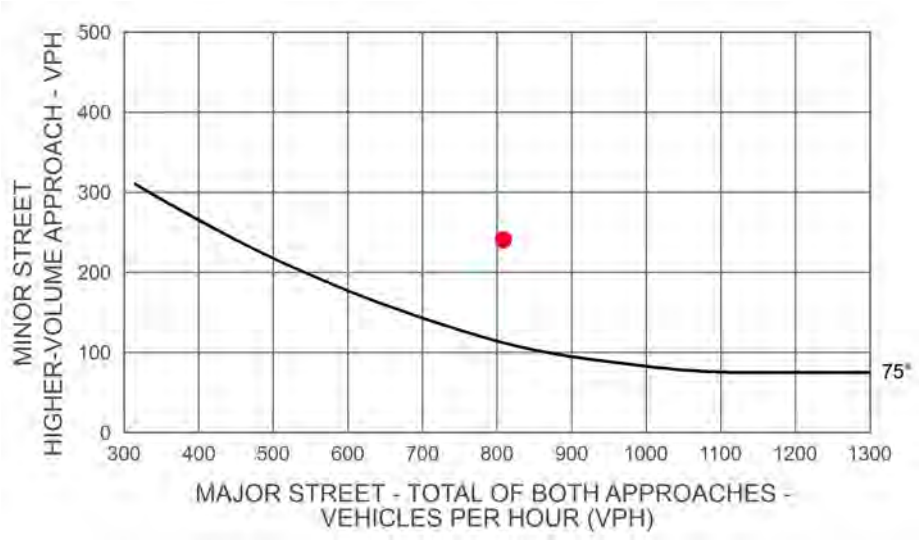


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: PM Future
Intersection #: 5

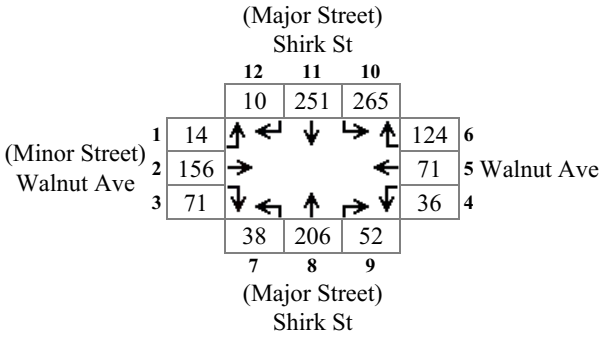


Major Total: 808
Minor High Volume: 241

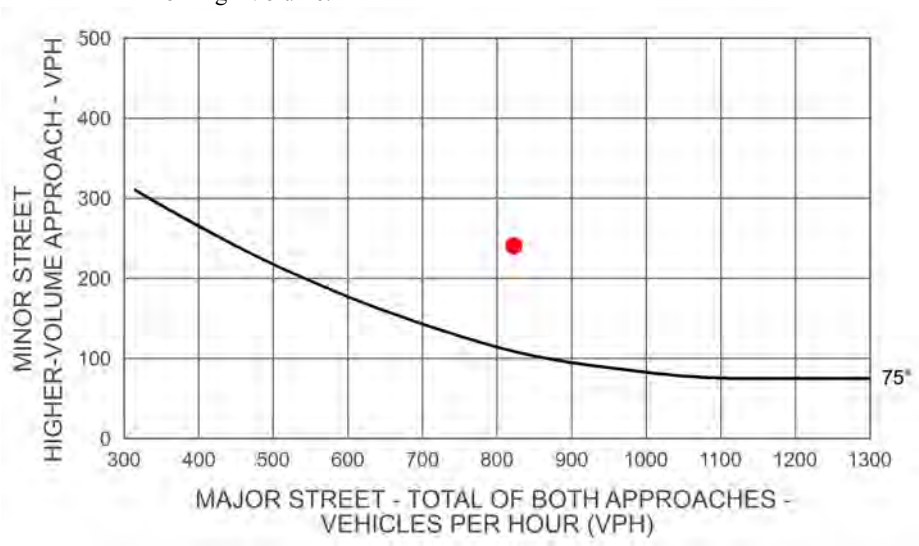


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: PM Future+Project
Intersection #: 5

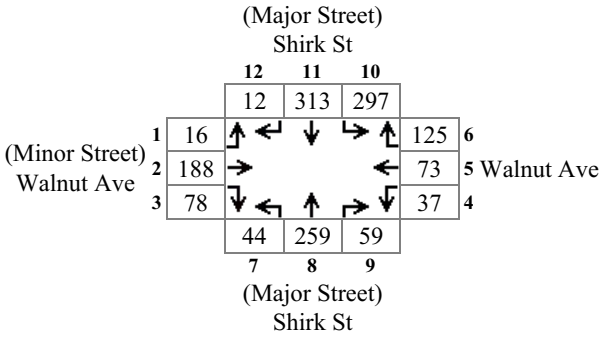


Major Total: 822
Minor High Volume: 241

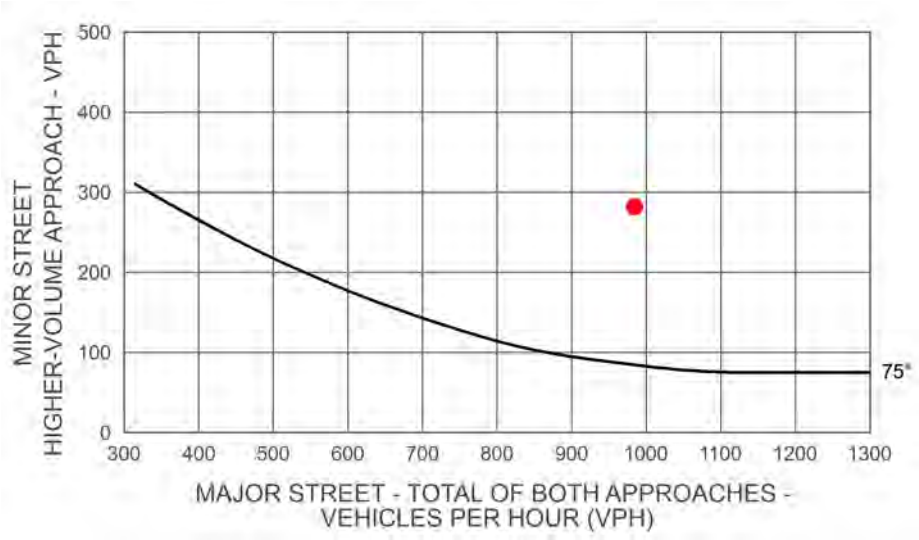


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: PM Future
Intersection #: 5

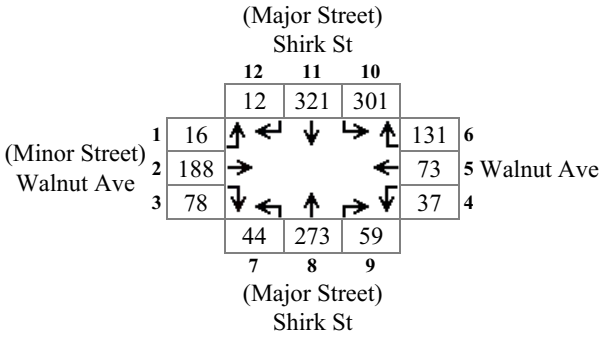


Major Total: 984
Minor High Volume: 282

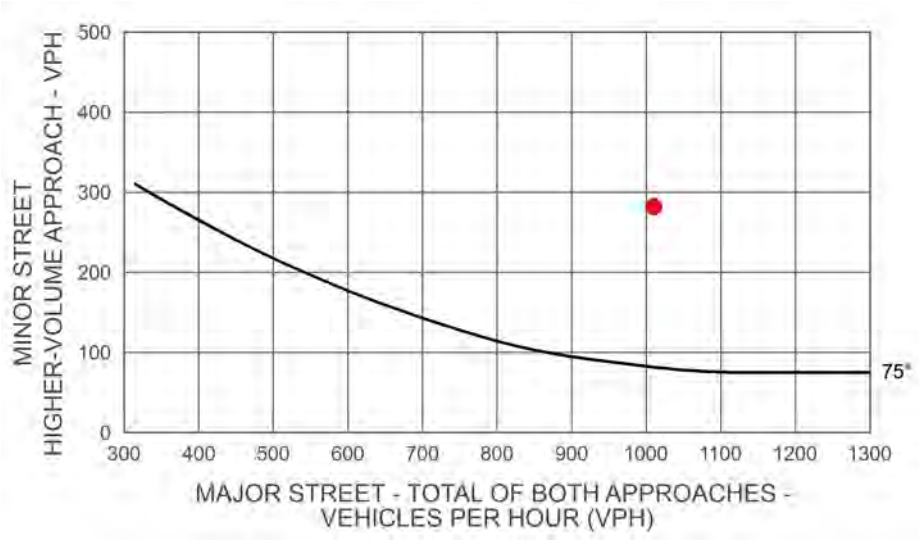


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: PM Future+Project (Future)
Intersection #: 5

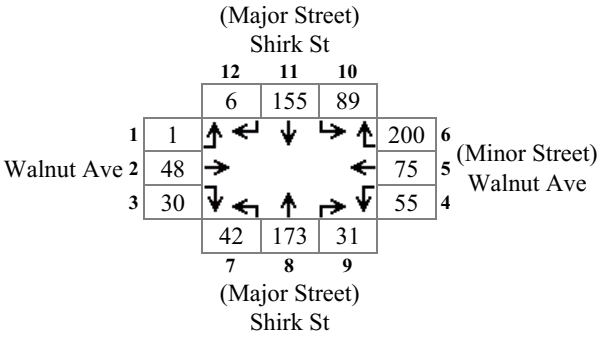


Major Total: 1010
Minor High Volume: 282

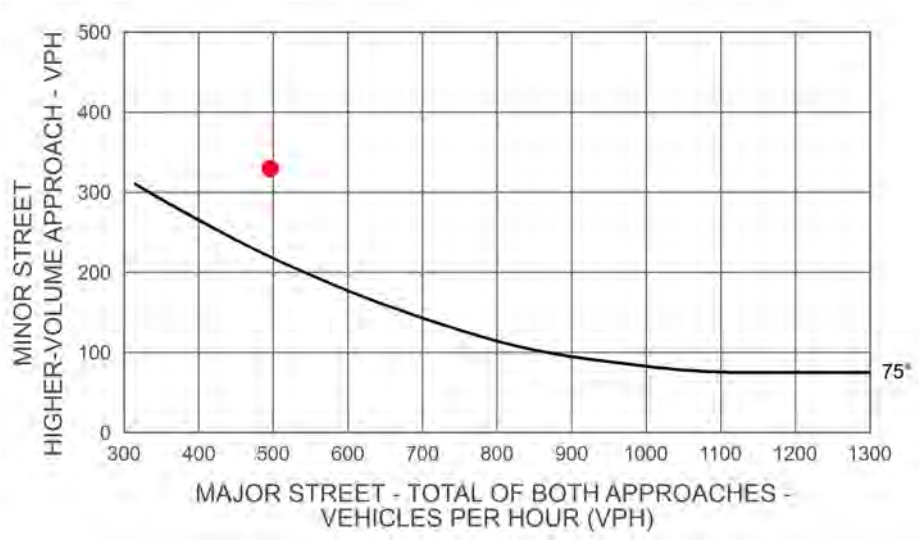


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: AM Existing
Intersection #: 5

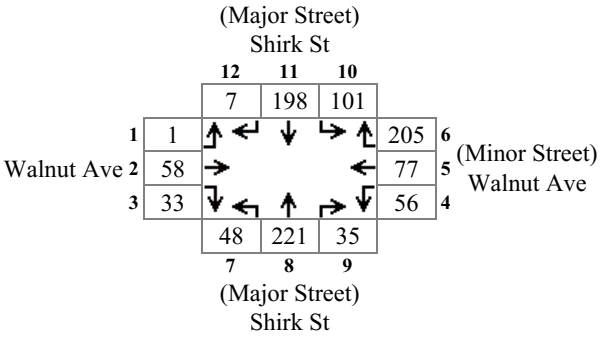


Major Total: 496
Minor High Volume: 330

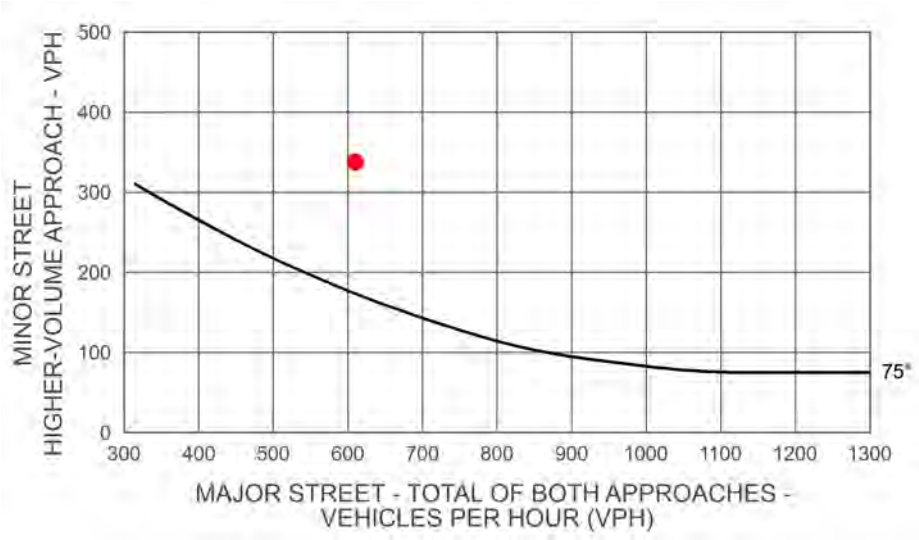


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: AM Future
Intersection #: 5

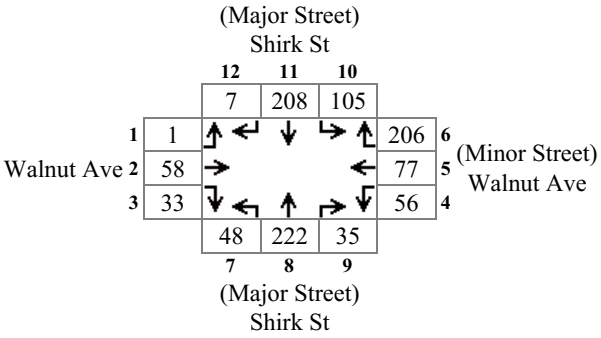


Major Total: 610
Minor High Volume: 338

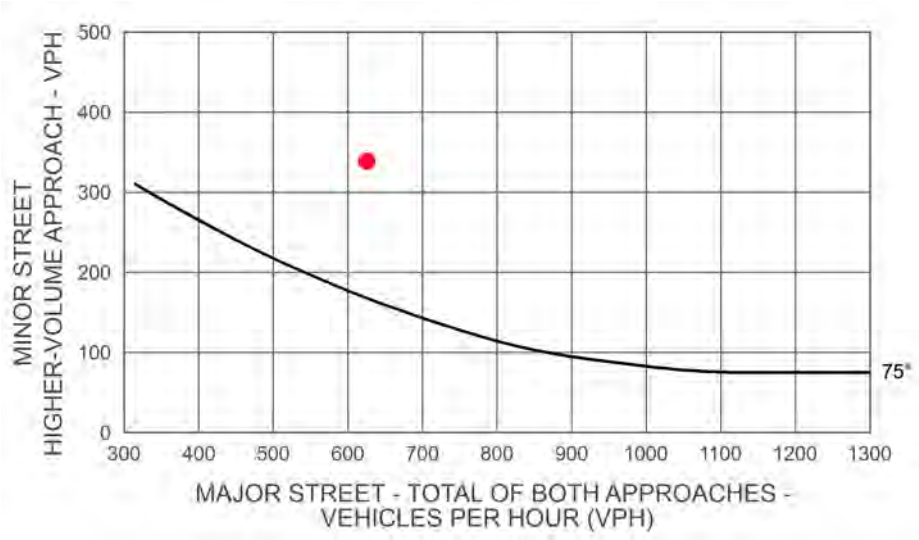


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: AM Future+Project
Intersection #: 5

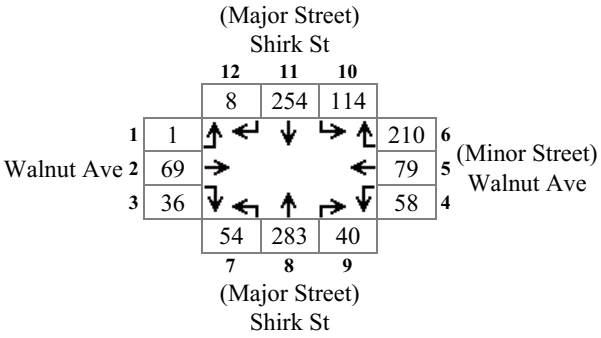


Major Total: 625
Minor High Volume: 339

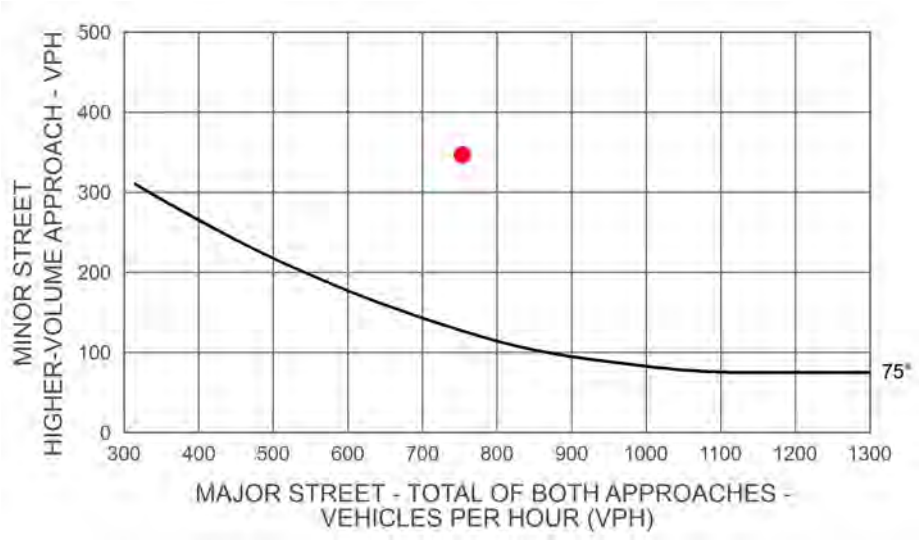


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: AM Future
Intersection #: 5

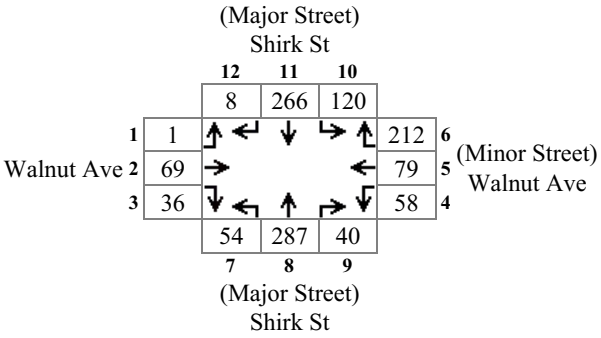


Major Total: 753
Minor High Volume: 347

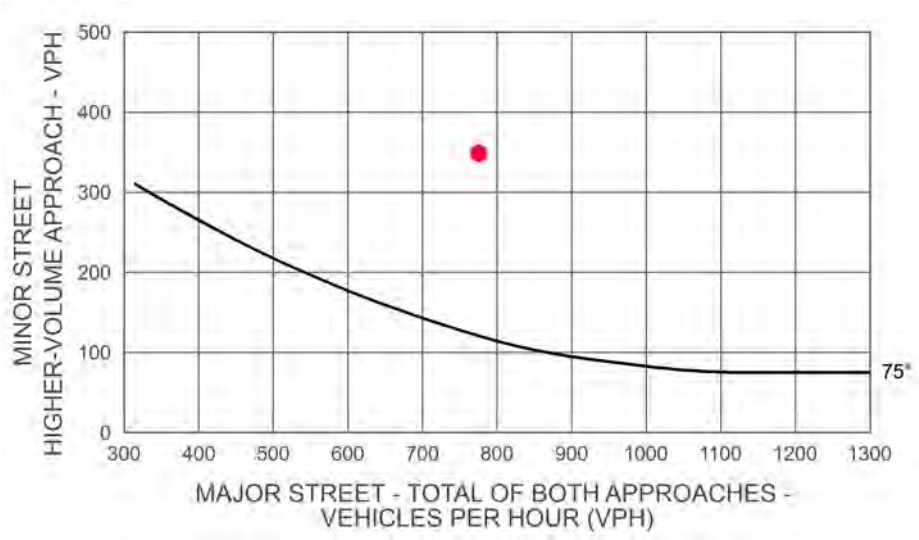


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: AM Future+Project (Future)
Intersection #: 5



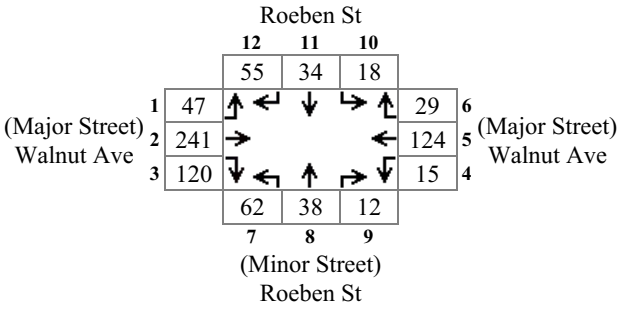
Major Total: 775
Minor High Volume: 349



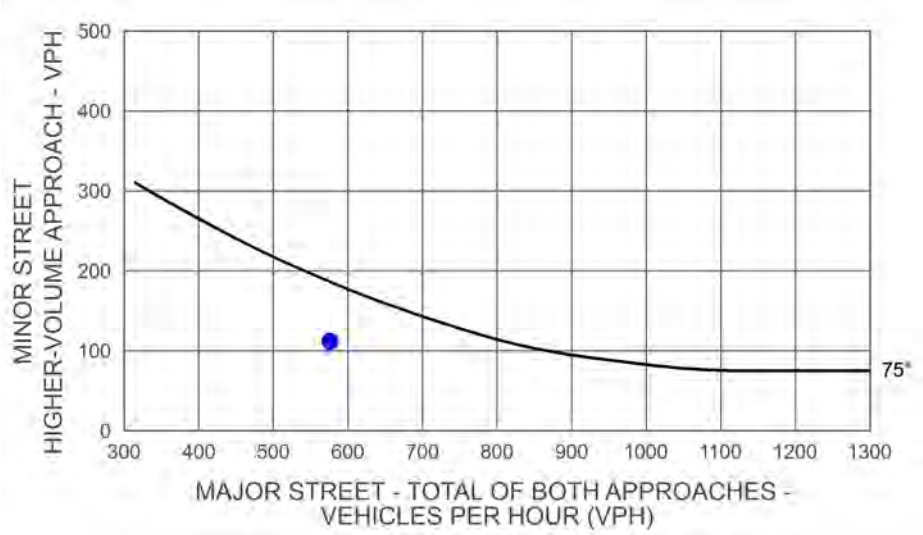
Intersection 6
Roeben St & Walnut Ave

Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Existing
Intersection #: 6

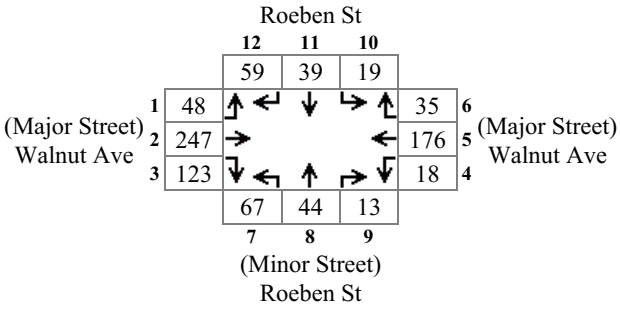


Major Total: 576
Minor High Volume: 112

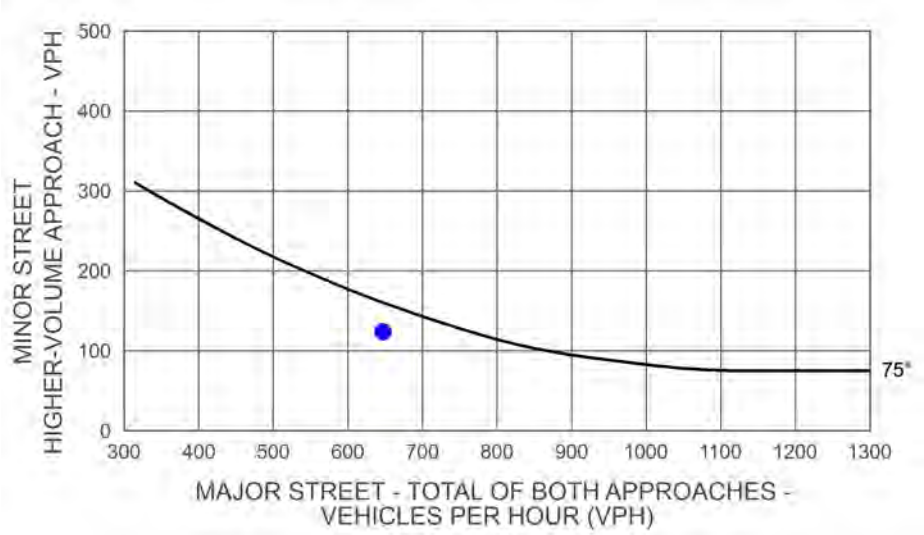


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 6

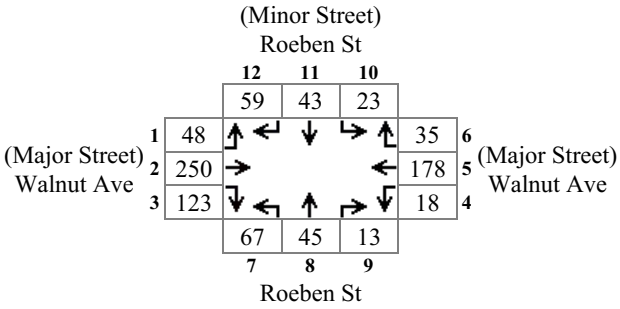


Major Total: 647
Minor High Volume: 124

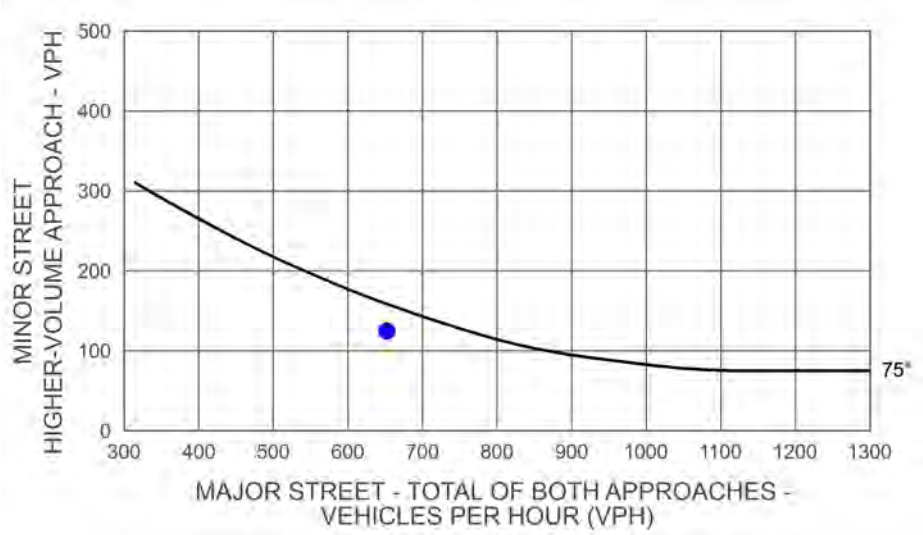


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future+Project
Intersection #: 6

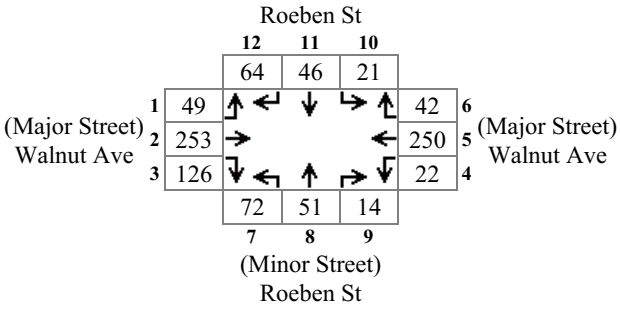


Major Total: 652
Minor High Volume: 125

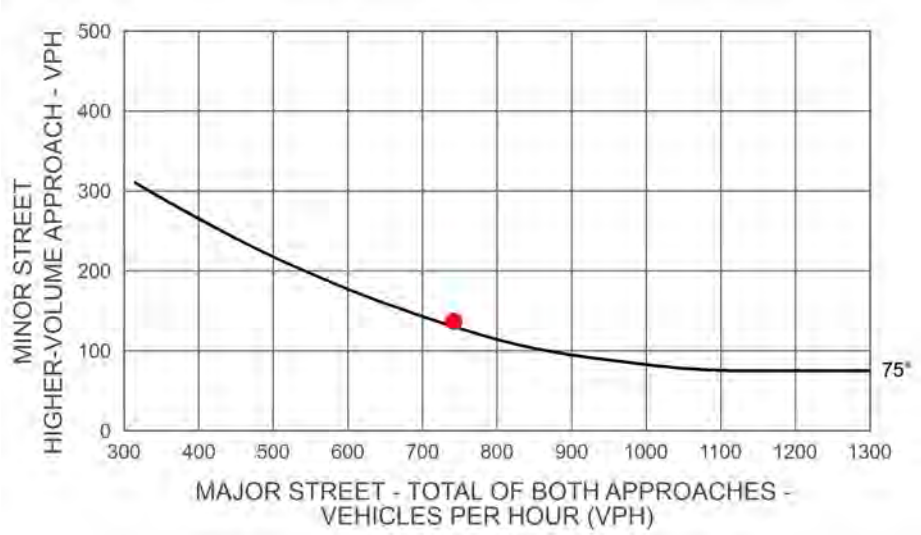


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: PM Future
Intersection #: 6

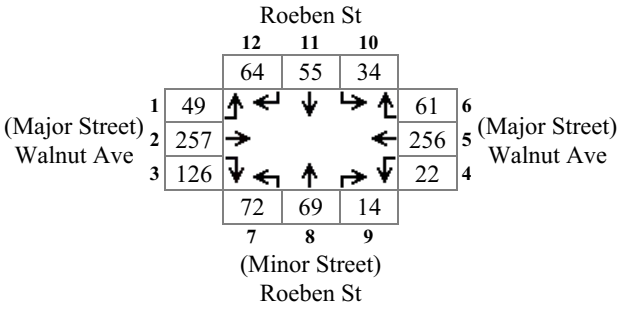


Major Total: 742
Minor High Volume: 137

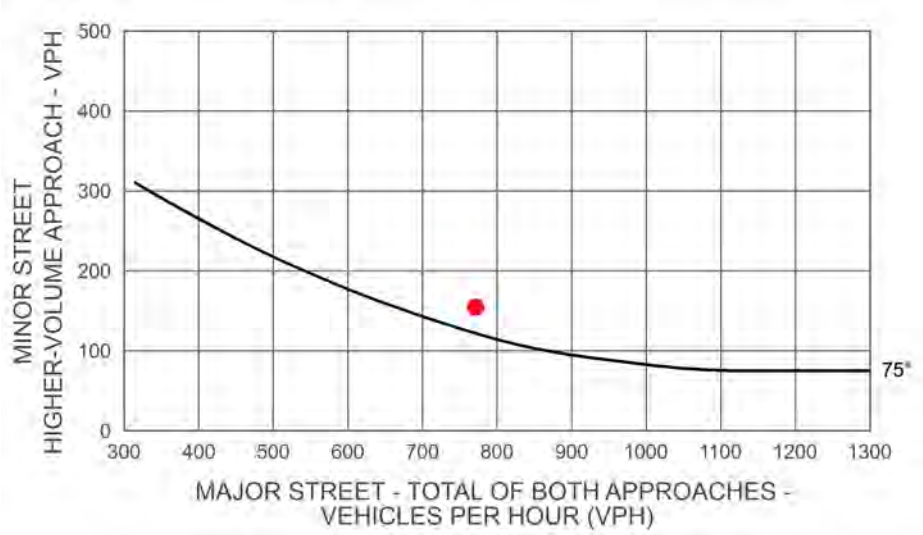


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: PM Future+Project (Future)
Intersection #: 6

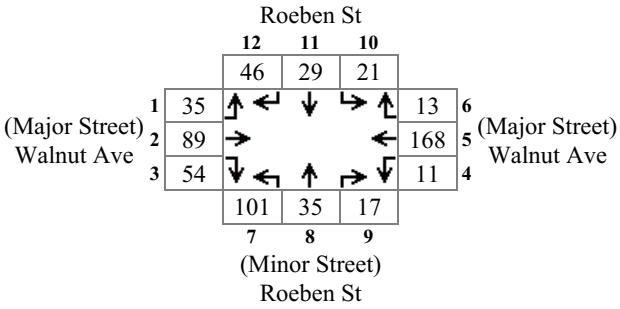


Major Total: 771
Minor High Volume: 155

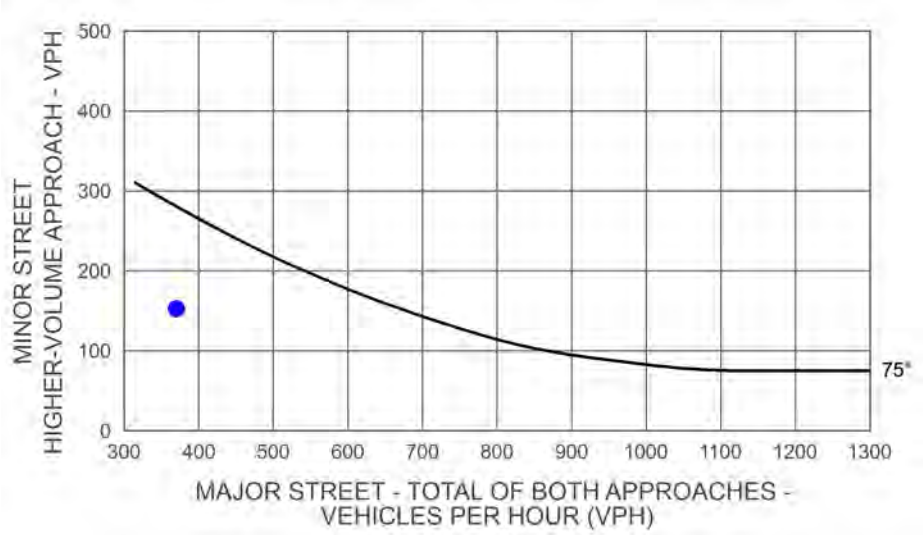


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Existing
Intersection #: 6

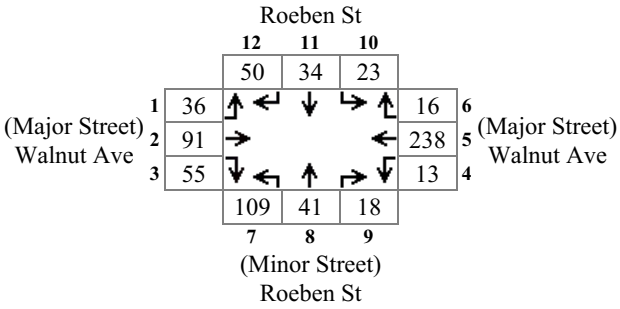


Major Total: 370
Minor High Volume: 153

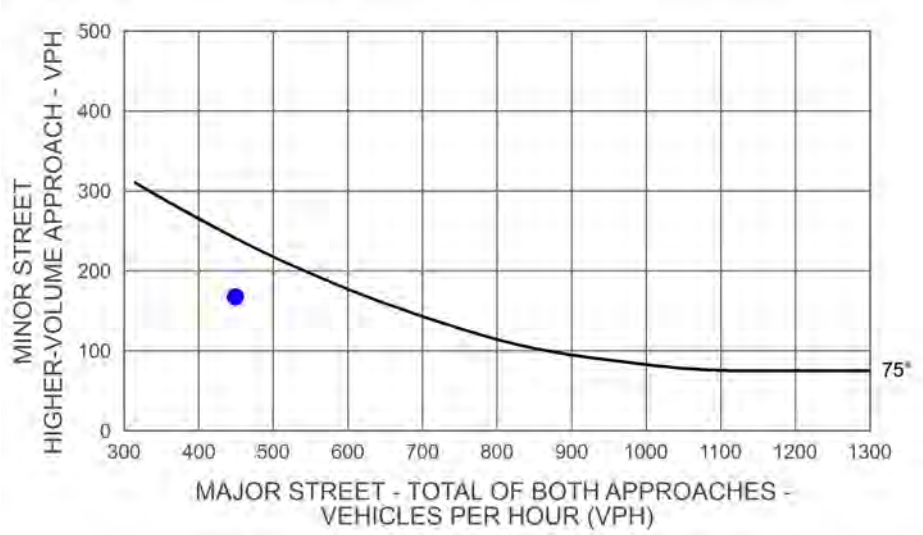


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 6

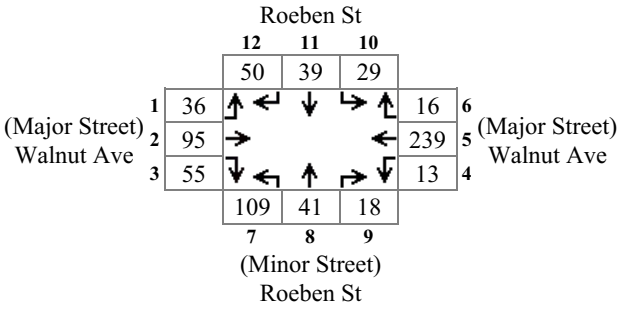


Major Total: 449
Minor High Volume: 168

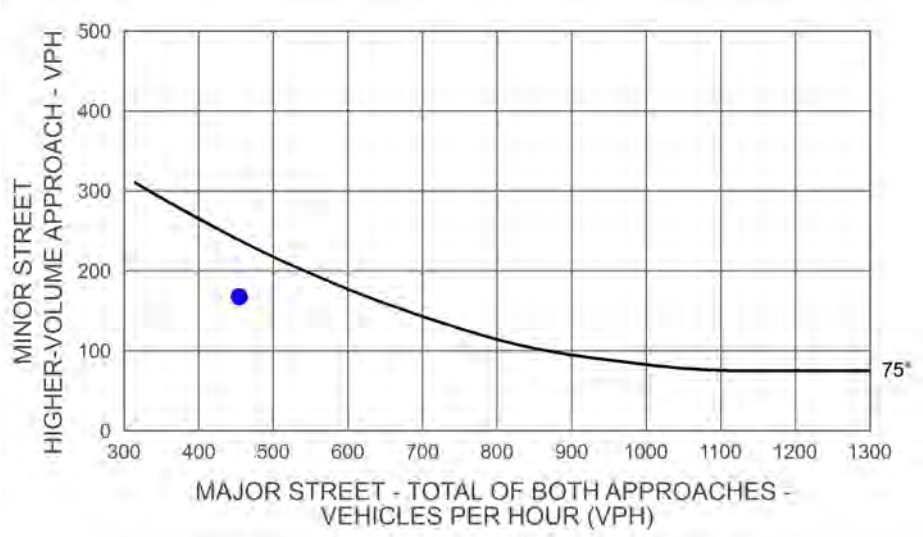


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project
Intersection #: 6

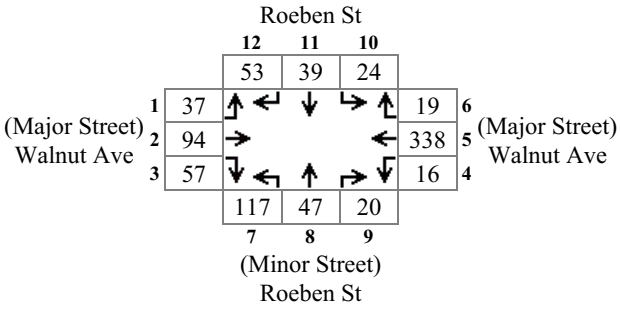


Major Total: 454
Minor High Volume: 168

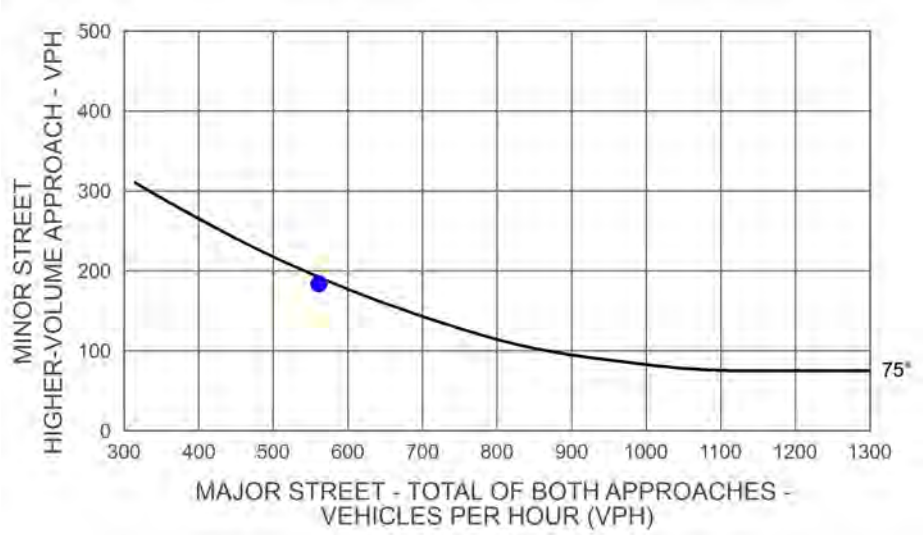


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 6

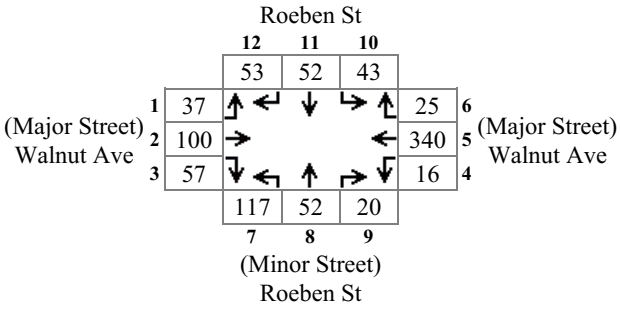


Major Total: 561
Minor High Volume: 184

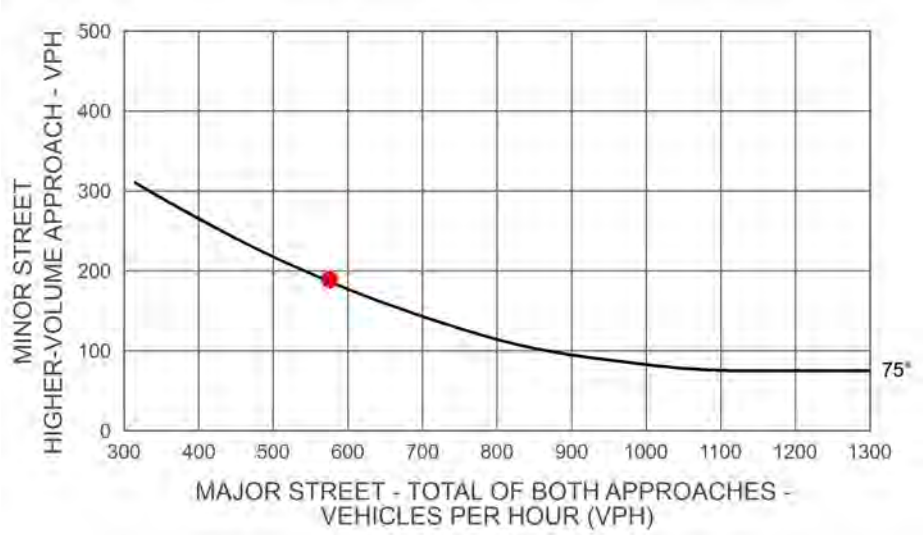


Rural Peak Hour Signal Warrant
Intersection Meets Signal Warrant

Scenario: AM Future+Project (Future)
Intersection #: 6



Major Total: 575
Minor High Volume: 189



Intersection 7
Street 3 & Tulare Ave

Intersection 8
Street 6 & Tulare Ave

Intersection 9
Shirk St & Avenue 4

Intersection 10
Roeben St & Avenue 6

2023

Warrant 1: Eight-hour Vehicular Volume

1: SR 198 WB Off Ramp & Shirk St

Intersection Information

Major Street Name:	Shirk Rd
Major Street Direction:	NB/SB
Minor Street Direction:	WB/WB

WARRANT 1 MET? Yes

Details:

Condition A Met?	Yes	11 Hours met (8 required)
Condition B Met?	Yes	10 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**5106**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**126**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**1126**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**322**		**225**		No	No	Yes	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	362		205		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:00 to 08:00	325		206		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:15 to 08:15	4329		122378		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:30 to 08:30	422		225		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:45 to 08:45	421		192		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:00 to 09:00	422		1758		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:15 to 09:15	285		152		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

08:30 to 09:30	**380**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**186**		**62**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**126**		**31**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**165**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**222**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**205**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**116**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**92**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**115**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**63**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**61**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**72**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**83**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**52**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	413		122		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:15 to 13:15	418		119		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:30 to 13:30	426		117		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:45 to 13:45	432		100		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

13:00 to 14:00	466		234		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

13:15 to 14:15	215		221		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:30 to 14:30	266		86		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**209**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**366**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**426**		**117**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
14:30 to 15:30	**432**		**100**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
14:45 to 15:45	**466**		**234**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
15:00 to 16:00	**215**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
15:15 to 16:15	**266**		**86**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

2: SR 198 EB Off-Ramp & Shirk St

Intersection Information

Major Street Name:	Shirk Rd
Major Street Direction:	NB/SB
Minor Street Direction:	WB/WB

WARRANT 1 MET? Yes

Details:

Condition A Met?	Yes	8 Hours met (8 required)
Condition B Met?	Yes	8 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**0**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**5**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**3**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**24**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**23**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**28**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**33**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**56**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**85**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**201**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**318**		**210**		No	No	Yes	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	362		222		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:00 to 08:00	305		152		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:15 to 08:15	322		148		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:30 to 08:30	405		222		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:45 to 08:45	482		225		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:00 to 09:00	465		209		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:15 to 09:15	415		201		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

08:30 to 09:30	**132**		**64**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**185**		**62**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**199**		**35**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**66**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**68**		**18**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**78**		**5**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**69**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**82**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**22**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**63**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**69**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**65**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**105**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**119**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	**222**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
12:15 to 13:15	**336**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
12:30 to 13:30	**426**		**215**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
12:45 to 13:45	**432**		**232**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
13:00 to 14:00	**466**		**234**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
13:15 to 14:15	**326**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
13:30 to 14:30	**315**		**176**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**226**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**205**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**206**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**65**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**55**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**62**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**19**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**21**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

4: Roeben St & Tulare Ave

Intersection Information

Major Street Name:	Tulare Ave
Major Street Direction:	EB/WB
Minor Street Direction:	NB/SB

WARRANT 1 MET? **No**

Details:

Condition A Met?	No	0 Hours met (8 required)
Condition B Met?	No	0 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**29**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**41**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:15 to 07:15	**46**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:30 to 07:30	**54**				No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

06:45 to 07:45	**63**		**290**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:00 to 08:00	**64**		**326**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:15 to 08:15	**69**		**312**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:30 to 08:30	**63**		**216**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:45 to 08:45	**59**		**146**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:00 to 09:00	**62**		**86**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:15 to 09:15	**52**		**49**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:30 to 09:30	**48**		**38**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**43**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**35**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**33**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**32**		**28**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**32**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**35**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**36**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**43**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**42**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**45**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**49**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**51**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**53**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	**49**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:15 to 13:15	**53**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:30 to 13:30	**47**		**128**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:45 to 13:45	**54**		**187**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:00 to 14:00	**58**		**234**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:15 to 14:15	**56**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:30 to 14:30	**60**		**176**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

13:45 to 14:45	**58**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**61**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**69**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**76**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

5: Shirk St & Walnut Ave

Intersection Information

Major Street Name:	Shirk St
Major Street Direction:	NB/SB
Minor Street Direction:	EB/WB

WARRANT 1 MET? **No**

Details:

Condition A Met?	No	0 Hours met (8 required)
Condition B Met?	No	0 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**29**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**41**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:15 to 07:15	**46**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:30 to 07:30	**54**				No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

06:45 to 07:45	**63**		**290**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:00 to 08:00	**64**		**326**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:15 to 08:15	**69**		**312**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:30 to 08:30	**63**		**216**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:45 to 08:45	**59**		**146**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:00 to 09:00	**62**		**86**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:15 to 09:15	**52**		**49**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:30 to 09:30	**48**		**38**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**43**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**35**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**33**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**32**		**28**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**32**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**35**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**36**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**43**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**42**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**45**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**49**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**51**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**53**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	**49**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:15 to 13:15	**53**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:30 to 13:30	**47**		**128**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:45 to 13:45	**54**		**187**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:00 to 14:00	**58**		**234**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:15 to 14:15	**56**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:30 to 14:30	**60**		**176**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

13:45 to 14:45	**58**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**61**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**69**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**76**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

6: Roeben St & Walnut Ave

Intersection Information

Major Street Name:	Walnut Ave
Major Street Direction:	EB/WB
Minor Street Direction:	NB/SB

WARRANT 1 MET? No

Details:

Condition A Met?	No	0 Hours met (8 required)
Condition B Met?	No	0 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**29**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**41**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**46**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**54**		**225**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	**80**		**52**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:00 to 08:00	**64**		**41**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:15 to 08:15	**69**		**31**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:30 to 08:30	**63**		**21**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:45 to 08:45	**59**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:00 to 09:00	**62**		**8**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:15 to 09:15	**52**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:30 to 09:30	**48**		**38**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**43**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**35**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**33**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**32**		**28**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**32**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**35**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**36**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**43**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**42**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**45**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**49**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**51**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**53**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	49		44		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:15 to 13:15	53		85		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:30 to 13:30	128		42		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:45 to 13:45	182		51		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:00 to 14:00	234		42		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:15 to 14:15	221		56		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:30 to 14:30	176		43		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**58**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**61**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**69**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**76**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

2023+Project

Warrant 1: Eight-hour Vehicular Volume

1: SR 198 WB Off Ramp & Shirk St

Intersection Information

Major Street Name:	Shirk Rd
Major Street Direction:	NB/SB
Minor Street Direction:	WB/WB

WARRANT 1 MET? Yes

Details:

Condition A Met?	Yes	11 Hours met (8 required)
Condition B Met?	Yes	10 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**5106**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**126**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**1126**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**322**		**225**		No	No	Yes	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	362		205		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:00 to 08:00	325		206		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:15 to 08:15	4329		122378		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:30 to 08:30	422		225		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:45 to 08:45	421		192		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:00 to 09:00	422		1758		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:15 to 09:15	285		152		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

08:30 to 09:30	**380**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**186**		**62**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**126**		**31**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**165**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**222**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**205**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**116**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**92**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**115**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**63**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**61**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**72**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**83**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**52**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	413		122		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:15 to 13:15	418		119		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:30 to 13:30	426		117		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:45 to 13:45	432		100		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

13:00 to 14:00	466		234		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

13:15 to 14:15	215		221		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:30 to 14:30	266		86		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**209**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**366**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**426**		**117**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
14:30 to 15:30	**432**		**100**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
14:45 to 15:45	**466**		**234**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
15:00 to 16:00	**215**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
15:15 to 16:15	**266**		**86**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

2: SR 198 EB Off-Ramp & Shirk St

Intersection Information

Major Street Name:	Shirk Rd
Major Street Direction:	NB/SB
Minor Street Direction:	WB/WB

WARRANT 1 MET? Yes

Details:

Condition A Met?	Yes	8 Hours met (8 required)
Condition B Met?	Yes	8 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**0**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**5**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**3**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**24**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**23**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**28**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**33**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**56**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**85**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**201**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**318**		**210**		No	No	Yes	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	362		222		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:00 to 08:00	305		152		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:15 to 08:15	322		148		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:30 to 08:30	405		222		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:45 to 08:45	482		225		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:00 to 09:00	465		209		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:15 to 09:15	415		201		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

08:30 to 09:30	**132**		**64**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**185**		**62**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**199**		**35**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**66**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**68**		**18**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**78**		**5**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**69**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**82**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**22**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**63**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**69**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**65**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**105**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**119**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	**222**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
12:15 to 13:15	**336**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
12:30 to 13:30	**426**		**215**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
12:45 to 13:45	**432**		**232**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
13:00 to 14:00	**466**		**234**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
13:15 to 14:15	**326**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
13:30 to 14:30	**315**		**176**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**226**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**205**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**206**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**65**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**55**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**62**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**19**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**21**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

4: Roeben St & Tulare Ave

Intersection Information

Major Street Name:	Tulare Ave
Major Street Direction:	EB/WB
Minor Street Direction:	NB/SB

WARRANT 1 MET? **No**

Details:

Condition A Met?	No	0 Hours met (8 required)
Condition B Met?	No	0 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**29**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**41**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:15 to 07:15	**46**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:30 to 07:30	**54**				No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

06:45 to 07:45	**63**		**290**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:00 to 08:00	**64**		**326**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:15 to 08:15	**69**		**312**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:30 to 08:30	**63**		**216**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:45 to 08:45	**59**		**146**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:00 to 09:00	**62**		**86**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:15 to 09:15	**52**		**49**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:30 to 09:30	**48**		**38**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**43**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**35**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**33**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**32**		**28**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**32**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**35**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**36**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**43**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**42**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**45**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**49**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**51**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**53**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	**49**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:15 to 13:15	**53**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:30 to 13:30	**47**		**128**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:45 to 13:45	**54**		**187**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:00 to 14:00	**58**		**234**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:15 to 14:15	**56**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:30 to 14:30	**60**		**176**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

13:45 to 14:45	**58**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**61**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**69**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**76**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

5: Shirk St & Walnut Ave

Intersection Information

Major Street Name:	Shirk St
Major Street Direction:	NB/SB
Minor Street Direction:	EB/WB

WARRANT 1 MET? **No**

Details:

Condition A Met?	No	0 Hours met (8 required)
Condition B Met?	No	0 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**29**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**41**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:15 to 07:15	**46**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:30 to 07:30	**54**				No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

06:45 to 07:45	**63**		**290**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:00 to 08:00	**64**		**326**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:15 to 08:15	**69**		**312**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:30 to 08:30	**63**		**216**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:45 to 08:45	**59**		**146**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:00 to 09:00	**62**		**86**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:15 to 09:15	**52**		**49**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:30 to 09:30	**48**		**38**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**43**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**35**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**33**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**32**		**28**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**32**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**35**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**36**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**43**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**42**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**45**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**49**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**51**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**53**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	**49**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:15 to 13:15	**53**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:30 to 13:30	**47**		**128**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:45 to 13:45	**54**		**187**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:00 to 14:00	**58**		**234**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:15 to 14:15	**56**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:30 to 14:30	**60**		**176**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

13:45 to 14:45	**58**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**61**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**69**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**76**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

6: Roeben St & Walnut Ave

Intersection Information

Major Street Name:	Walnut Ave
Major Street Direction:	EB/WB
Minor Street Direction:	NB/SB

WARRANT 1 MET? No

Details:

Condition A Met?	No	0 Hours met (8 required)
Condition B Met?	No	0 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**29**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**41**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**46**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**54**		**225**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	**80**		**52**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:00 to 08:00	**64**		**41**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:15 to 08:15	**69**		**31**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:30 to 08:30	**63**		**21**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:45 to 08:45	**59**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:00 to 09:00	**62**		**8**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:15 to 09:15	**52**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:30 to 09:30	**48**		**38**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**43**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**35**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**33**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**32**		**28**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**32**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**35**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**36**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**43**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**42**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**45**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**49**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**51**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**53**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	49		44		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:15 to 13:15	53		85		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:30 to 13:30	128		42		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:45 to 13:45	182		51		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:00 to 14:00	234		42		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:15 to 14:15	221		56		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:30 to 14:30	176		43		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**58**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**61**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**69**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**76**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

2028

Warrant 1: Eight-hour Vehicular Volume

1: SR 198 WB Off Ramp & Shirk St

Intersection Information

Major Street Name:	Shirk Rd
Major Street Direction:	NB/SB
Minor Street Direction:	WB/WB

WARRANT 1 MET? Yes

Details:

Condition A Met?	Yes	11 Hours met (8 required)
Condition B Met?	Yes	10 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**5106**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**126**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**1126**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**322**		**225**		No	No	Yes	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	362		205		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:00 to 08:00	325		206		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:15 to 08:15	4329		122378		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:30 to 08:30	422		225		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:45 to 08:45	421		192		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:00 to 09:00	422		1758		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:15 to 09:15	285		152		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

08:30 to 09:30	**380**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**186**		**62**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**126**		**31**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**165**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**222**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**205**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**116**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**92**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**115**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**63**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**61**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**72**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**83**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**52**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	413		122		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:15 to 13:15	418		119		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:30 to 13:30	426		117		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:45 to 13:45	432		100		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

13:00 to 14:00	466		234		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

13:15 to 14:15	215		221		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:30 to 14:30	266		86		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**209**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**366**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**426**		**117**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
14:30 to 15:30	**432**		**100**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
14:45 to 15:45	**466**		**234**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
15:00 to 16:00	**215**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
15:15 to 16:15	**266**		**86**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

2: SR 198 EB Off-Ramp & Shirk St

Intersection Information

Major Street Name:	Shirk Rd
Major Street Direction:	NB/SB
Minor Street Direction:	WB/WB

WARRANT 1 MET? Yes

Details:

Condition A Met?	Yes	8 Hours met (8 required)
Condition B Met?	Yes	8 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**0**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**5**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**3**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**24**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**23**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**28**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**33**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**56**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**85**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**201**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**318**		**210**		No	No	Yes	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	362		222		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:00 to 08:00	305		152		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:15 to 08:15	322		148		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:30 to 08:30	405		222		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:45 to 08:45	482		225		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:00 to 09:00	465		209		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:15 to 09:15	415		201		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

08:30 to 09:30	**132**		**64**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**185**		**62**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**199**		**35**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**66**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**68**		**18**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**78**		**5**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**69**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**82**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**22**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**63**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**69**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**65**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**105**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**119**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	**222**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
12:15 to 13:15	**336**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
12:30 to 13:30	**426**		**215**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
12:45 to 13:45	**432**		**232**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
13:00 to 14:00	**466**		**234**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
13:15 to 14:15	**326**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
13:30 to 14:30	**315**		**176**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**226**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**205**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**206**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**65**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**55**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**62**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**19**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**21**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

3: Shirk Rd & Tulare Ave

Intersection Information

Major Street Name:	Shirk Rd
Major Street Direction:	NB/SB
Minor Street Direction:	EB/WB

WARRANT 1 MET? **No**

Details:

Condition A Met?	No	0 Hours met (8 required)
Condition B Met?	No	0 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**29**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**41**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**46**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**54**		**225**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	**63**		**290**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:00 to 08:00	**64**		**326**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:15 to 08:15	**69**		**312**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:30 to 08:30	**63**		**216**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:45 to 08:45	**59**		**146**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:00 to 09:00	**62**		**86**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:15 to 09:15	**52**		**49**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:30 to 09:30	**48**		**38**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**43**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**35**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**33**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**32**		**28**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**32**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**35**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**36**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**43**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**42**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**45**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**49**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**51**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**53**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	**49**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:15 to 13:15	**53**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:30 to 13:30	**47**		**128**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:45 to 13:45	**54**		**187**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:00 to 14:00	**58**		**234**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:15 to 14:15	**56**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:30 to 14:30	**60**		**176**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

13:45 to 14:45	**58**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**61**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**69**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**76**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

4: Roeben St & Tulare Ave

Intersection Information

Major Street Name:	Tulare Ave
Major Street Direction:	EB/WB
Minor Street Direction:	NB/SB

WARRANT 1 MET? **No**

Details:

Condition A Met?	No	0 Hours met (8 required)
Condition B Met?	No	0 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**29**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**41**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:15 to 07:15	**46**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:30 to 07:30	**54**				No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

06:45 to 07:45	**63**		**290**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:00 to 08:00	**64**		**326**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:15 to 08:15	**69**		**312**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:30 to 08:30	**63**		**216**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:45 to 08:45	**59**		**146**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:00 to 09:00	**62**		**86**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:15 to 09:15	**52**		**49**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:30 to 09:30	**48**		**38**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**43**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**35**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**33**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**32**		**28**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**32**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**35**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**36**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**43**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**42**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**45**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**49**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**51**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**53**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	**49**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:15 to 13:15	**53**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:30 to 13:30	**47**		**128**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:45 to 13:45	**54**		**187**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:00 to 14:00	**58**		**234**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:15 to 14:15	**56**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:30 to 14:30	**60**		**176**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

13:45 to 14:45	**58**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**61**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**69**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**76**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

5: Shirk St & Walnut Ave

Intersection Information

Major Street Name:	Shirk Rd
Major Street Direction:	NB/SB
Minor Street Direction:	WB/WB

WARRANT 1 MET? Yes

Details:

Condition A Met?	Yes	8 Hours met (8 required)
Condition B Met?	Yes	9 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**56**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**82**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**156**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**312**		**225**		No	No	Yes	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	362		125		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:00 to 08:00	382		156		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:15 to 08:15	432		178		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:30 to 08:30	452		210		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:45 to 08:45	421		192		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:00 to 09:00	422		178		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:15 to 09:15	285		152		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

08:30 to 09:30	**355**		**53**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**386**		**62**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**103**		**37**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**64**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**82**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**95**		**18**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**86**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**82**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**71**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**63**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**61**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**71**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**118**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**210**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	225		44		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:15 to 13:15	386		85		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:30 to 13:30	526		117		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:45 to 13:45	532		185		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

13:00 to 14:00	565		234		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

13:15 to 14:15	342		221		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:30 to 14:30	215		176		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**256**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**215**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**189**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**201**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

6: Roeben St & Walnut Ave

Intersection Information

Major Street Name:	Walnut Ave
Major Street Direction:	EB/WB
Minor Street Direction:	NB/SB

WARRANT 1 MET? No

Details:

Condition A Met?	No	0 Hours met (8 required)
Condition B Met?	No	0 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**29**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**41**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**46**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**54**		**225**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	**80**		**52**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:00 to 08:00	**64**		**41**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:15 to 08:15	**69**		**31**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:30 to 08:30	**63**		**21**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:45 to 08:45	**59**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:00 to 09:00	**62**		**8**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:15 to 09:15	**52**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:30 to 09:30	**48**		**38**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**43**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**35**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**33**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**32**		**28**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**32**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**35**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**36**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**43**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**42**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**45**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**49**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**51**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**53**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	49		44		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:15 to 13:15	53		85		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:30 to 13:30	128		42		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:45 to 13:45	182		51		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:00 to 14:00	234		42		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:15 to 14:15	221		56		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:30 to 14:30	176		43		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**58**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**61**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**69**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**76**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

2028+Project

Warrant 1: Eight-hour Vehicular Volume

1: SR 198 WB Off Ramp & Shirk St

Intersection Information

Major Street Name:	Shirk Rd
Major Street Direction:	NB/SB
Minor Street Direction:	WB/WB

WARRANT 1 MET? Yes

Details:

Condition A Met?	Yes	11 Hours met (8 required)
Condition B Met?	Yes	10 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**5106**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**126**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**1126**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**322**		**225**		No	No	Yes	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	362		205		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:00 to 08:00	325		206		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:15 to 08:15	4329		122378		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:30 to 08:30	422		225		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:45 to 08:45	421		192		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:00 to 09:00	422		1758		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:15 to 09:15	285		152		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

08:30 to 09:30	**380**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**186**		**62**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**126**		**31**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**165**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**222**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**205**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**116**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**92**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**115**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**63**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**61**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**72**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**83**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**52**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	413		122		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:15 to 13:15	418		119		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:30 to 13:30	426		117		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:45 to 13:45	432		100		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

13:00 to 14:00	466		234		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

13:15 to 14:15	215		221		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:30 to 14:30	266		86		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**209**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**366**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**426**		**117**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
14:30 to 15:30	**432**		**100**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
14:45 to 15:45	**466**		**234**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
15:00 to 16:00	**215**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
15:15 to 16:15	**266**		**86**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

2: SR 198 EB Off-Ramp & Shirk St

Intersection Information

Major Street Name:	Shirk Rd
Major Street Direction:	NB/SB
Minor Street Direction:	WB/WB

WARRANT 1 MET? Yes

Details:

Condition A Met?	Yes	8 Hours met (8 required)
Condition B Met?	Yes	8 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**0**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**5**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**3**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**24**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**23**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**28**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**33**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**56**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**85**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**201**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**318**		**210**		No	No	Yes	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	362		222		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:00 to 08:00	305		152		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:15 to 08:15	322		148		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:30 to 08:30	405		222		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:45 to 08:45	482		225		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:00 to 09:00	465		209		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:15 to 09:15	415		201		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

08:30 to 09:30	**132**		**64**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**185**		**62**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**199**		**35**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**66**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**68**		**18**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**78**		**5**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**69**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**82**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**22**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**63**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**69**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**65**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**105**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**119**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	**222**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
12:15 to 13:15	**336**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
12:30 to 13:30	**426**		**215**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
12:45 to 13:45	**432**		**232**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
13:00 to 14:00	**466**		**234**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
13:15 to 14:15	**326**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
13:30 to 14:30	**315**		**176**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**226**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**205**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**206**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**65**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**55**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**62**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**19**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**21**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

3: Shirk Rd & Tulare Ave

Intersection Information

Major Street Name:	Shirk Rd
Major Street Direction:	NB/SB
Minor Street Direction:	EB/WB

WARRANT 1 MET? **No**

Details:

Condition A Met?	No	0 Hours met (8 required)
Condition B Met?	No	0 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**29**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**41**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**46**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**54**		**225**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	**63**		**290**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:00 to 08:00	**64**		**326**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:15 to 08:15	**69**		**312**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:30 to 08:30	**63**		**216**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:45 to 08:45	**59**		**146**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:00 to 09:00	**62**		**86**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:15 to 09:15	**52**		**49**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:30 to 09:30	**48**		**38**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**43**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**35**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**33**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**32**		**28**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**32**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**35**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**36**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**43**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**42**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**45**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**49**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**51**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**53**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	**49**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:15 to 13:15	**53**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:30 to 13:30	**47**		**128**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:45 to 13:45	**54**		**187**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:00 to 14:00	**58**		**234**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:15 to 14:15	**56**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:30 to 14:30	**60**		**176**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

13:45 to 14:45	**58**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**61**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**69**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**76**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

4: Roeben St & Tulare Ave

Intersection Information

Major Street Name:	Tulare Ave
Major Street Direction:	EB/WB
Minor Street Direction:	NB/SB

WARRANT 1 MET? **No**

Details:

Condition A Met?	No	0 Hours met (8 required)
Condition B Met?	No	0 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**29**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**41**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:15 to 07:15	**46**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:30 to 07:30	**54**				No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

06:45 to 07:45	**63**		**290**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:00 to 08:00	**64**		**326**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:15 to 08:15	**69**		**312**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:30 to 08:30	**63**		**216**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:45 to 08:45	**59**		**146**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:00 to 09:00	**62**		**86**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:15 to 09:15	**52**		**49**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:30 to 09:30	**48**		**38**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**43**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**35**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**33**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**32**		**28**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**32**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**35**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**36**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**43**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**42**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**45**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**49**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**51**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**53**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	**49**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:15 to 13:15	**53**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:30 to 13:30	**47**		**128**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:45 to 13:45	**54**		**187**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:00 to 14:00	**58**		**234**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:15 to 14:15	**56**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:30 to 14:30	**60**		**176**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

13:45 to 14:45	**58**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**61**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**69**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**76**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

5: Shirk St & Walnut Ave

Intersection Information

Major Street Name:	Shirk Rd
Major Street Direction:	NB/SB
Minor Street Direction:	WB/WB

WARRANT 1 MET? Yes

Details:

Condition A Met?	Yes	8 Hours met (8 required)
Condition B Met?	Yes	9 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**56**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**82**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**156**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**312**		**225**		No	No	Yes	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	362		125		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:00 to 08:00	382		156		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:15 to 08:15	432		178		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:30 to 08:30	452		210		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:45 to 08:45	421		192		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:00 to 09:00	422		178		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:15 to 09:15	285		152		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

08:30 to 09:30	**355**		**53**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**386**		**62**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**103**		**37**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**64**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**82**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**95**		**18**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**86**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**82**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**71**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**63**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**61**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**71**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**118**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**210**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	225		44		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:15 to 13:15	386		85		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:30 to 13:30	526		117		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:45 to 13:45	532		185		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

13:00 to 14:00	565		234		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

13:15 to 14:15	342		221		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:30 to 14:30	215		176		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**256**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**215**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**189**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**201**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

6: Roeben St & Walnut Ave

Intersection Information

Major Street Name:	Walnut Ave
Major Street Direction:	EB/WB
Minor Street Direction:	NB/SB

WARRANT 1 MET? No

Details:

Condition A Met?	No	0 Hours met (8 required)
Condition B Met?	No	0 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**29**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**41**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**46**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**54**		**225**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	**80**		**52**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:00 to 08:00	**64**		**41**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:15 to 08:15	**69**		**31**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:30 to 08:30	**63**		**21**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:45 to 08:45	**59**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:00 to 09:00	**62**		**8**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:15 to 09:15	**52**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:30 to 09:30	**48**		**38**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**43**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**35**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**33**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**32**		**28**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**32**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**35**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**36**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**43**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**42**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**45**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**49**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**51**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**53**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	49		44		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:15 to 13:15	53		85		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:30 to 13:30	128		42		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:45 to 13:45	182		51		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:00 to 14:00	234		42		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:15 to 14:15	221		56		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:30 to 14:30	176		43		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**58**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**61**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**69**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**76**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

2033

Warrant 1: Eight-hour Vehicular Volume

1: SR 198 WB Off Ramp & Shirk St

Intersection Information

Major Street Name:	Shirk Rd
Major Street Direction:	NB/SB
Minor Street Direction:	WB/WB

WARRANT 1 MET? Yes

Details:

Condition A Met?	Yes	11 Hours met (8 required)
Condition B Met?	Yes	10 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**5106**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**126**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**1126**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**322**		**225**		No	No	Yes	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	362		205		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:00 to 08:00	325		206		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:15 to 08:15	4329		122378		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:30 to 08:30	422		225		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:45 to 08:45	421		192		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:00 to 09:00	422		1758		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:15 to 09:15	285		152		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

08:30 to 09:30	**380**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**186**		**62**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**126**		**31**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**165**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**222**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**205**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**116**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**92**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**115**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**63**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**61**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**72**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**83**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**52**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	413		122		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:15 to 13:15	418		119		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:30 to 13:30	426		117		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:45 to 13:45	432		100		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

13:00 to 14:00	466		234		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

13:15 to 14:15	215		221		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:30 to 14:30	266		86		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**209**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**366**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**426**		**117**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
14:30 to 15:30	**432**		**100**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
14:45 to 15:45	**466**		**234**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
15:00 to 16:00	**215**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
15:15 to 16:15	**266**		**86**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

2: SR 198 EB Off-Ramp & Shirk St

Intersection Information

Major Street Name:	Shirk Rd
Major Street Direction:	NB/SB
Minor Street Direction:	WB/WB

WARRANT 1 MET? Yes

Details:

Condition A Met?	Yes	8 Hours met (8 required)
Condition B Met?	Yes	8 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**0**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**5**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**3**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**24**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**23**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**28**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**33**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**56**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**85**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**201**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**318**		**210**		No	No	Yes	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	362		222		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:00 to 08:00	305		152		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:15 to 08:15	322		148		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:30 to 08:30	405		222		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:45 to 08:45	482		225		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:00 to 09:00	465		209		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:15 to 09:15	415		201		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

08:30 to 09:30	**132**		**64**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**185**		**62**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**199**		**35**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**66**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**68**		**18**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**78**		**5**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**69**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**82**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**22**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**63**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**69**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**65**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**105**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**119**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	**222**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
12:15 to 13:15	**336**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
12:30 to 13:30	**426**		**215**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
12:45 to 13:45	**432**		**232**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
13:00 to 14:00	**466**		**234**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
13:15 to 14:15	**326**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
13:30 to 14:30	**315**		**176**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**226**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**205**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**206**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**65**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**55**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**62**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**19**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**21**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

3: Shirk Rd & Tulare Ave

Intersection Information

Major Street Name:	Shirk Rd
Major Street Direction:	NB/SB
Minor Street Direction:	EB/WB

WARRANT 1 MET? **No**

Details:

Condition A Met?	No	0 Hours met (8 required)
Condition B Met?	No	0 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**29**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**41**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**46**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**54**		**225**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	**63**		**290**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:00 to 08:00	**64**		**326**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:15 to 08:15	**69**		**312**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:30 to 08:30	**63**		**216**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:45 to 08:45	**59**		**146**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:00 to 09:00	**62**		**86**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:15 to 09:15	**52**		**49**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:30 to 09:30	**48**		**38**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**43**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**35**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**33**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**32**		**28**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**32**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**35**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**36**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**43**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**42**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**45**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**49**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**51**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**53**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	**49**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:15 to 13:15	**53**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:30 to 13:30	**47**		**128**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:45 to 13:45	**54**		**187**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:00 to 14:00	**58**		**234**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:15 to 14:15	**56**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:30 to 14:30	**60**		**176**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

13:45 to 14:45	**58**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**61**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**69**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**76**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

4: Roeben St & Tulare Ave

Intersection Information

Major Street Name:	Tulare Ave
Major Street Direction:	EB/WB
Minor Street Direction:	NB/SB

WARRANT 1 MET? **No**

Details:

Condition A Met?	No	0 Hours met (8 required)
Condition B Met?	No	0 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**29**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**41**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:15 to 07:15	**46**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:30 to 07:30	**54**				No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

06:45 to 07:45	**63**		**290**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:00 to 08:00	**64**		**326**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:15 to 08:15	**69**		**312**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:30 to 08:30	**63**		**216**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:45 to 08:45	**59**		**146**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:00 to 09:00	**62**		**86**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:15 to 09:15	**52**		**49**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:30 to 09:30	**48**		**38**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**43**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**35**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**33**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**32**		**28**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**32**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**35**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**36**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**43**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**42**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**45**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**49**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**51**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**53**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	**49**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:15 to 13:15	**53**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:30 to 13:30	**47**		**128**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:45 to 13:45	**54**		**187**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:00 to 14:00	**58**		**234**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:15 to 14:15	**56**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:30 to 14:30	**60**		**176**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

13:45 to 14:45	**58**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**61**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**69**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**76**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

5: Shirk St & Walnut Ave

Intersection Information

Major Street Name:	Shirk Rd
Major Street Direction:	NB/SB
Minor Street Direction:	WB/WB

WARRANT 1 MET? Yes

Details:

Condition A Met?	Yes	8 Hours met (8 required)
Condition B Met?	Yes	9 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**56**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**82**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**156**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**312**		**225**		No	No	Yes	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	362		125		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:00 to 08:00	382		156		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:15 to 08:15	432		178		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:30 to 08:30	452		210		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:45 to 08:45	421		192		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:00 to 09:00	422		178		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:15 to 09:15	285		152		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

08:30 to 09:30	**355**		**53**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**386**		**62**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**103**		**37**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**64**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**82**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**95**		**18**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**86**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**82**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**71**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**63**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**61**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**71**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**118**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**210**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	**225**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
12:15 to 13:15	**386**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
12:30 to 13:30	**526**		**117**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
12:45 to 13:45	**532**		**185**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
13:00 to 14:00	**565**		**234**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
13:15 to 14:15	**342**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
13:30 to 14:30	**215**		**176**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**256**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**215**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**189**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**201**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

6: Roeben St & Walnut Ave

Intersection Information

Major Street Name:	Walnut Ave
Major Street Direction:	EB/WB
Minor Street Direction:	NB/SB

WARRANT 1 MET? No

Details:

Condition A Met?	No	0 Hours met (8 required)
Condition B Met?	No	0 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**29**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**41**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**46**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**54**		**225**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	**80**		**52**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:00 to 08:00	**64**		**41**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:15 to 08:15	**69**		**31**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:30 to 08:30	**63**		**21**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:45 to 08:45	**59**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:00 to 09:00	**62**		**8**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:15 to 09:15	**52**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:30 to 09:30	**48**		**38**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**43**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**35**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**33**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**32**		**28**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**32**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**35**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**36**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**43**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**42**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**45**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**49**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**51**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**53**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	49		44		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:15 to 13:15	53		85		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:30 to 13:30	128		42		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:45 to 13:45	182		51		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:00 to 14:00	234		42		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:15 to 14:15	221		56		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:30 to 14:30	176		43		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**58**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**61**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**69**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**76**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

2033+Project

Warrant 1: Eight-hour Vehicular Volume

1: SR 198 WB Off Ramp & Shirk St

Intersection Information

Major Street Name:	Shirk Rd
Major Street Direction:	NB/SB
Minor Street Direction:	WB/WB

WARRANT 1 MET? Yes

Details:

Condition A Met?	Yes	11 Hours met (8 required)
Condition B Met?	Yes	10 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**5106**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**126**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**1126**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**322**		**225**		No	No	Yes	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	362		205		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:00 to 08:00	325		206		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:15 to 08:15	4329		122378		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:30 to 08:30	422		225		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:45 to 08:45	421		192		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:00 to 09:00	422		1758		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:15 to 09:15	285		152		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

08:30 to 09:30	**380**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**186**		**62**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**126**		**31**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**165**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**222**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**205**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**116**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**92**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**115**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**63**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**61**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**72**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**83**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**52**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	413		122		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:15 to 13:15	418		119		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:30 to 13:30	426		117		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:45 to 13:45	432		100		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

13:00 to 14:00	466		234		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

13:15 to 14:15	215		221		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:30 to 14:30	266		86		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**209**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**366**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**426**		**117**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
14:30 to 15:30	**432**		**100**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
14:45 to 15:45	**466**		**234**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
15:00 to 16:00	**215**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
15:15 to 16:15	**266**		**86**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

2: SR 198 EB Off-Ramp & Shirk St

Intersection Information

Major Street Name:	Shirk Rd
Major Street Direction:	NB/SB
Minor Street Direction:	WB/WB

WARRANT 1 MET? Yes

Details:

Condition A Met?	Yes	8 Hours met (8 required)
Condition B Met?	Yes	8 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**0**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**5**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**3**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**24**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**23**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**28**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**33**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**56**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**85**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**201**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**318**		**210**		No	No	Yes	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	362		222		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:00 to 08:00	305		152		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:15 to 08:15	322		148		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:30 to 08:30	405		222		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:45 to 08:45	482		225		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:00 to 09:00	465		209		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:15 to 09:15	415		201		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

08:30 to 09:30	**132**		**64**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**185**		**62**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**199**		**35**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**66**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**68**		**18**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**78**		**5**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**69**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**82**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**22**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**63**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**69**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**65**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**105**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**119**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	**222**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
12:15 to 13:15	**336**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
12:30 to 13:30	**426**		**215**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
12:45 to 13:45	**432**		**232**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
13:00 to 14:00	**466**		**234**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
13:15 to 14:15	**326**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
13:30 to 14:30	**315**		**176**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**226**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**205**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**206**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**65**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**55**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**62**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**19**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**21**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

3: Shirk Rd & Tulare Ave

Intersection Information

Major Street Name:	Shirk Rd
Major Street Direction:	NB/SB
Minor Street Direction:	EB/WB

WARRANT 1 MET? **No**

Details:

Condition A Met?	No	0 Hours met (8 required)
Condition B Met?	No	0 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**29**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**41**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**46**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**54**		**225**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	**63**		**290**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:00 to 08:00	**64**		**326**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:15 to 08:15	**69**		**312**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:30 to 08:30	**63**		**216**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:45 to 08:45	**59**		**146**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:00 to 09:00	**62**		**86**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:15 to 09:15	**52**		**49**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:30 to 09:30	**48**		**38**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**43**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**35**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**33**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**32**		**28**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**32**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**35**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**36**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**43**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**42**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**45**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**49**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**51**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**53**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	**49**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:15 to 13:15	**53**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:30 to 13:30	**47**		**128**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:45 to 13:45	**54**		**187**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:00 to 14:00	**58**		**234**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:15 to 14:15	**56**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:30 to 14:30	**60**		**176**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

13:45 to 14:45	**58**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**61**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**69**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**76**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

4: Roeben St & Tulare Ave

Intersection Information

Major Street Name:	Tulare Ave
Major Street Direction:	EB/WB
Minor Street Direction:	NB/SB

WARRANT 1 MET? **No**

Details:

Condition A Met?	No	0 Hours met (8 required)
Condition B Met?	No	0 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**29**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**41**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:15 to 07:15	**46**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:30 to 07:30	**54**				No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

06:45 to 07:45	**63**		**290**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:00 to 08:00	**64**		**326**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:15 to 08:15	**69**		**312**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:30 to 08:30	**63**		**216**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
07:45 to 08:45	**59**		**146**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:00 to 09:00	**62**		**86**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:15 to 09:15	**52**		**49**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:30 to 09:30	**48**		**38**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**43**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**35**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**33**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**32**		**28**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**32**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**35**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**36**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**43**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**42**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**45**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**49**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**51**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**53**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	**49**		**44**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:15 to 13:15	**53**		**85**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:30 to 13:30	**47**		**128**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
12:45 to 13:45	**54**		**187**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:00 to 14:00	**58**		**234**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:15 to 14:15	**56**		**221**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
13:30 to 14:30	**60**		**176**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

13:45 to 14:45	**58**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**61**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**69**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**76**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

5: Shirk St & Walnut Ave

Intersection Information

Major Street Name:	Shirk Rd
Major Street Direction:	NB/SB
Minor Street Direction:	WB/WB

WARRANT 1 MET? Yes

Details:

Condition A Met?	Yes	8 Hours met (8 required)
Condition B Met?	Yes	9 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**56**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**82**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**156**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**312**		**225**		No	No	Yes	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	362		125		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:00 to 08:00	382		156		Yes	No	Yes	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

07:15 to 08:15	432		178		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:30 to 08:30	452		210		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:45 to 08:45	421		192		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:00 to 09:00	422		178		Yes	No	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

08:15 to 09:15	285		152		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

08:30 to 09:30	**355**		**53**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**386**		**62**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**103**		**37**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**64**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**82**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**95**		**18**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**86**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**82**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**71**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**63**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**61**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**71**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**118**		**33**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**210**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	225		44		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:15 to 13:15	386		85		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:30 to 13:30	526		117		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

12:45 to 13:45	532		185		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

13:00 to 14:00	565		234		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

13:15 to 14:15	342		221		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:30 to 14:30	215		176		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**256**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**215**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**189**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**201**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

6: Roeben St & Walnut Ave

Intersection Information

Major Street Name:	Walnut Ave
Major Street Direction:	EB/WB
Minor Street Direction:	NB/SB

WARRANT 1 MET? No

Details:

Condition A Met?	No	0 Hours met (8 required)
Condition B Met?	No	0 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
00:00 to 01:00	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
00:15 to 01:15	**1**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
01:30 to 02:30	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
02:00 to 03:00	**3**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

02:15 to 03:15	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:30 to 04:30	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
03:45 to 04:45	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:00 to 05:00	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:15 to 05:15	**9**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:30 to 05:30	**16**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
04:45 to 05:45	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

05:00 to 06:00	**21**		**2**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:15 to 06:15	**29**		**6**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:30 to 06:30	**29**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
05:45 to 06:45	**29**		**34**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
06:00 to 07:00	**41**		**70**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:15 to 07:15	**46**		**121**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**54**		**225**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

06:45 to 07:45	**80**		**52**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:00 to 08:00	**64**		**41**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:15 to 08:15	**69**		**31**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:30 to 08:30	**63**		**21**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

07:45 to 08:45	**59**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:00 to 09:00	**62**		**8**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:15 to 09:15	**52**		**19**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

08:30 to 09:30	**48**		**38**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**43**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**35**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**33**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**32**		**28**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**32**		**27**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**35**		**29**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

10:15 to 11:15	**36**		**24**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:30 to 11:30	**43**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**42**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**45**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**49**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**51**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
11:45 to 12:45	**53**		**25**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	49		44		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:15 to 13:15	53		85		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:30 to 13:30	128		42		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

12:45 to 13:45	182		51		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:00 to 14:00	234		42		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:15 to 14:15	221		56		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:30 to 14:30	176		43		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				

13:45 to 14:45	**58**		**120**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:00 to 15:00	**61**		**54**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	Yes				
14:15 to 15:15	**69**		**26**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:30 to 15:30	**76**		**20**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
14:45 to 15:45	**91**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:00 to 16:00	**102**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:15 to 16:15	**102**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

15:30 to 16:30	**105**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
15:45 to 16:45	**91**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:00 to 17:00	**88**		**14**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:15 to 17:15	**84**		**17**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**82**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**83**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**72**		**15**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

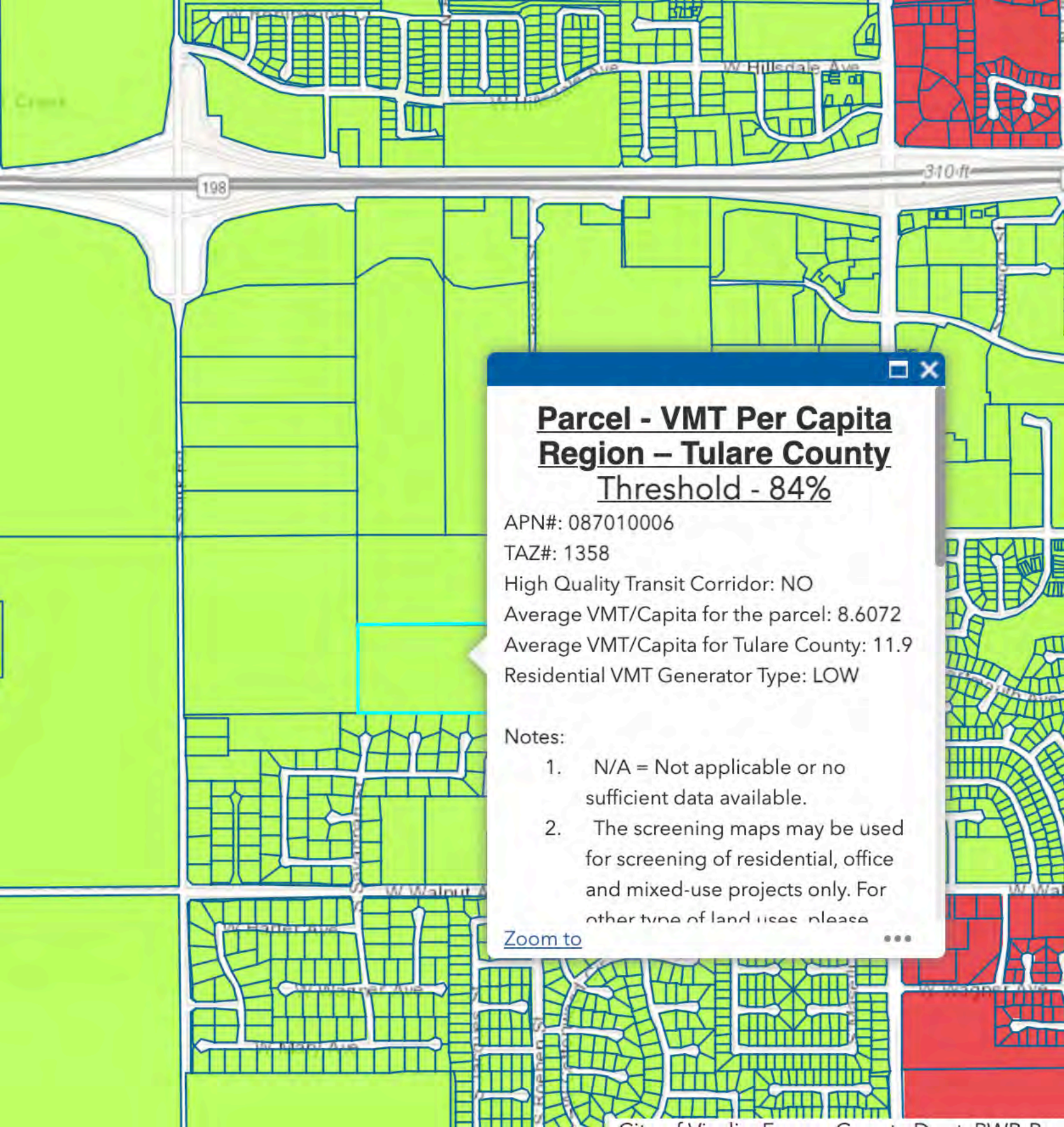
17:15 to 18:15	**68**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**61**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**51**		**3**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:00 to 19:00	**46**		**1**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**43**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**38**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**33**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

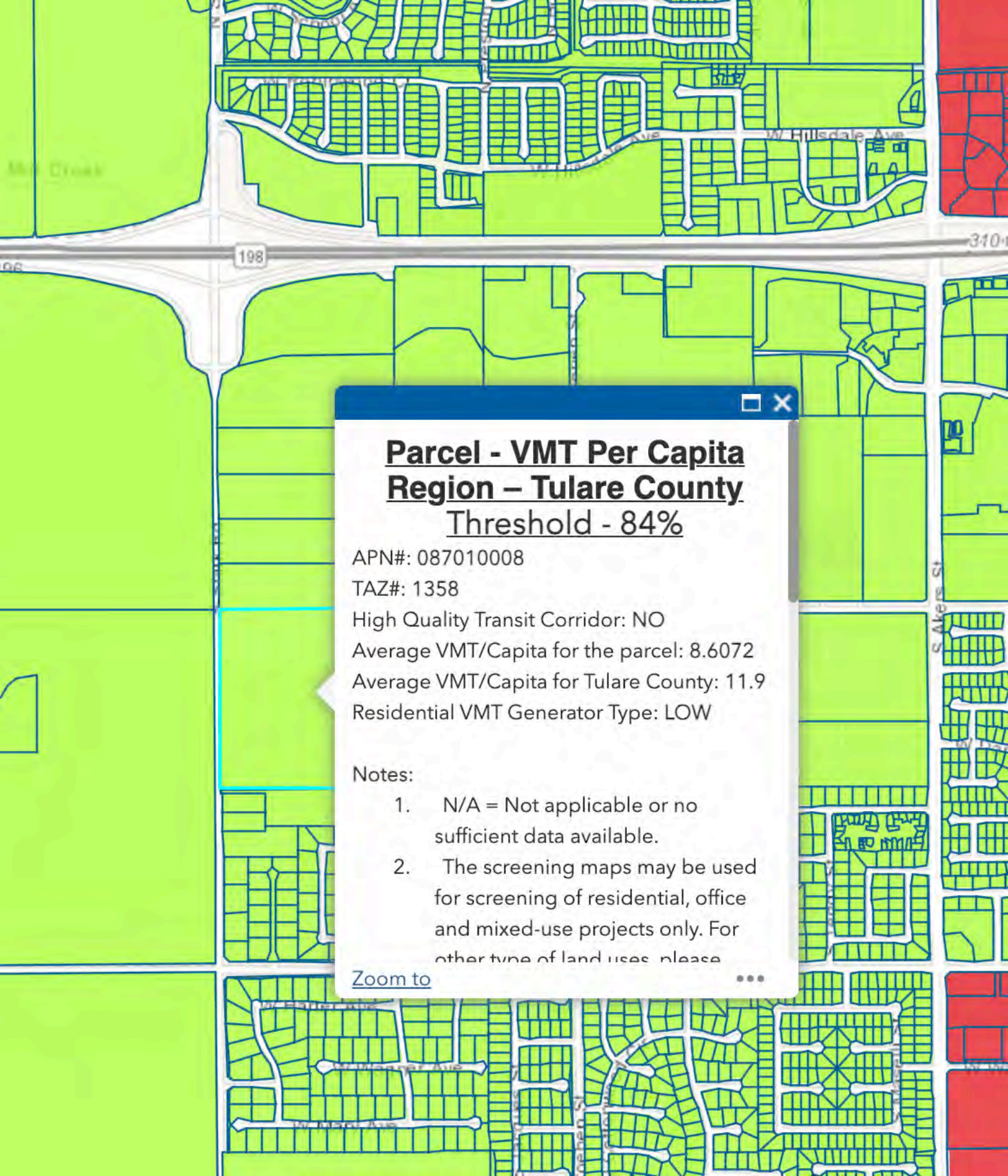
19:00 to 20:00	**28**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:15 to 20:15	**24**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:30 to 20:30	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
19:45 to 20:45	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:00 to 21:00	**26**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:15 to 21:15	**21**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
20:30 to 21:30	**18**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

20:45 to 21:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:00 to 22:00	**11**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:15 to 22:15	**12**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:30 to 22:30	**14**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
21:45 to 22:45	**13**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:00 to 23:00	**9**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				
22:15 to 23:15	**7**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

22:30 to 23:30	**2**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				

23:45 to 00:45	**4**		**0**		No	No	No	No
Condition A	Volume >= 70% column (350)?	No	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	No	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	No	**Volume >= 56% column (42)?**	No				


W Hillsdale Ave
198
310 ft
Parcel - VMT Per Capita
Region – Tulare County
Threshold - 84%
APN#: 087010006
TAZ#: 1358
High Quality Transit Corridor: NO
Average VMT/Capita for the parcel: 8.6072
Average VMT/Capita for Tulare County: 11.9
Residential VMT Generator Type: LOW
Notes:
1. N/A = Not applicable or no sufficient data available.
2. The screening maps may be used for screening of residential, office and mixed-use projects only. For
Zoom to



Parcel - VMT Per Capita Region – Tulare County

Threshold - 84%

APN#: 087010008

TAZ#: 1358

High Quality Transit Corridor: NO

Average VMT/Capita for the parcel: 8.6072

Average VMT/Capita for Tulare County: 11.9

Residential VMT Generator Type: LOW

Notes:

1. N/A = Not applicable or no sufficient data available.
2. The screening maps may be used for screening of residential, office and mixed-use projects only. For other type of land uses, please

Metro Traffic Data Inc.
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www.metrotrafficdata.com

Turning Movement Report

Prepared For:
Ruettgers & Schuler Civil Engineers
1800 30th St, Ste 260
Bakersfield, CA 93301

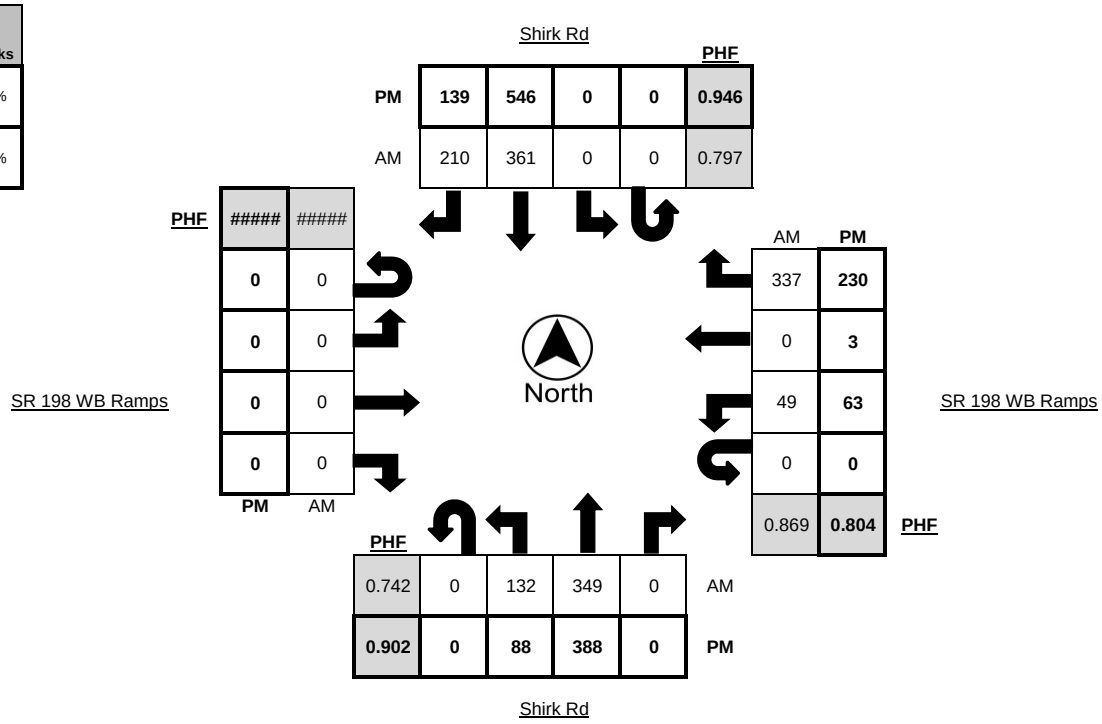
LOCATION Rd 92 @ SR 198 WB Ramps
LATITUDE 36.3281
COUNTY Tulare
LONGITUDE -119.3677
COLLECTION DATE Thursday, November 02, 2023
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
6:00 AM - 6:15 AM	0	18	33	0	4	0	0	37	27	3	0	0	0	0	0	0	4	0	45	1
6:15 AM - 6:30 AM	0	17	35	0	1	0	0	32	25	7	0	0	0	0	0	0	6	0	48	1
6:30 AM - 6:45 AM	0	27	50	0	1	0	0	35	40	4	0	0	0	0	0	0	8	1	49	3
6:45 AM - 7:00 AM	0	29	75	0	3	0	0	51	31	4	0	0	0	0	0	0	10	0	85	3
7:00 AM - 7:15 AM	0	23	62	0	5	0	0	68	39	3	0	0	0	0	0	0	8	0	70	5
7:15 AM - 7:30 AM	0	32	79	0	2	0	0	68	53	4	0	0	0	0	0	0	12	0	85	0
7:30 AM - 7:45 AM	0	41	82	0	5	0	0	108	56	10	0	0	0	0	0	0	12	0	88	2
7:45 AM - 8:00 AM	0	36	126	0	4	0	0	117	62	11	0	0	0	0	0	0	17	0	94	3
TOTAL	**0**	**223**	**542**	**0**	**25**	**0**	**0**	**516**	**333**	**46**	**0**	**0**	**0**	**0**	**0**	**0**	**77**	**1**	**564**	**18**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	16	91	0	2	0	0	129	32	4	0	0	0	0	0	0	14	2	60	2
4:15 PM - 4:30 PM	0	24	85	0	8	0	0	126	33	4	0	0	0	0	0	0	15	0	69	0
4:30 PM - 4:45 PM	0	15	96	0	8	0	0	142	30	4	0	0	0	0	0	0	20	0	50	2
4:45 PM - 5:00 PM	0	23	101	0	2	0	0	134	39	2	0	0	0	0	0	0	11	2	37	4
5:00 PM - 5:15 PM	0	26	106	0	4	0	0	144	37	3	0	0	0	0	0	0	17	1	74	3
5:15 PM - 5:30 PM	0	19	101	0	2	0	0	129	36	3	0	0	0	0	0	0	13	1	44	0
5:30 PM - 5:45 PM	0	16	93	0	2	0	0	131	28	0	0	0	0	0	0	0	9	2	56	3
5:45 PM - 6:00 PM	0	16	82	0	4	0	0	92	27	2	0	0	0	0	0	0	4	1	41	0
TOTAL	**0**	**155**	**755**	**0**	**32**	**0**	**0**	**1027**	**262**	**22**	**0**	**0**	**0**	**0**	**0**	**0**	**103**	**9**	**431**	**14**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 8:00 AM	0	132	349	0	16	0	0	361	210	28	0	0	0	0	0	0	49	0	337	10
4:15 PM - 5:15 PM	0	88	388	0	22	0	0	546	139	13	0	0	0	0	0	0	63	3	230	9

	PHF	Trucks
AM	0.795	3.8%
PM	0.899	3.0%



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Turning Movement Report

Prepared For:
Ruettgers & Schuler Civil Engineers
1800 30th St, Ste 260
Bakersfield, CA 93301

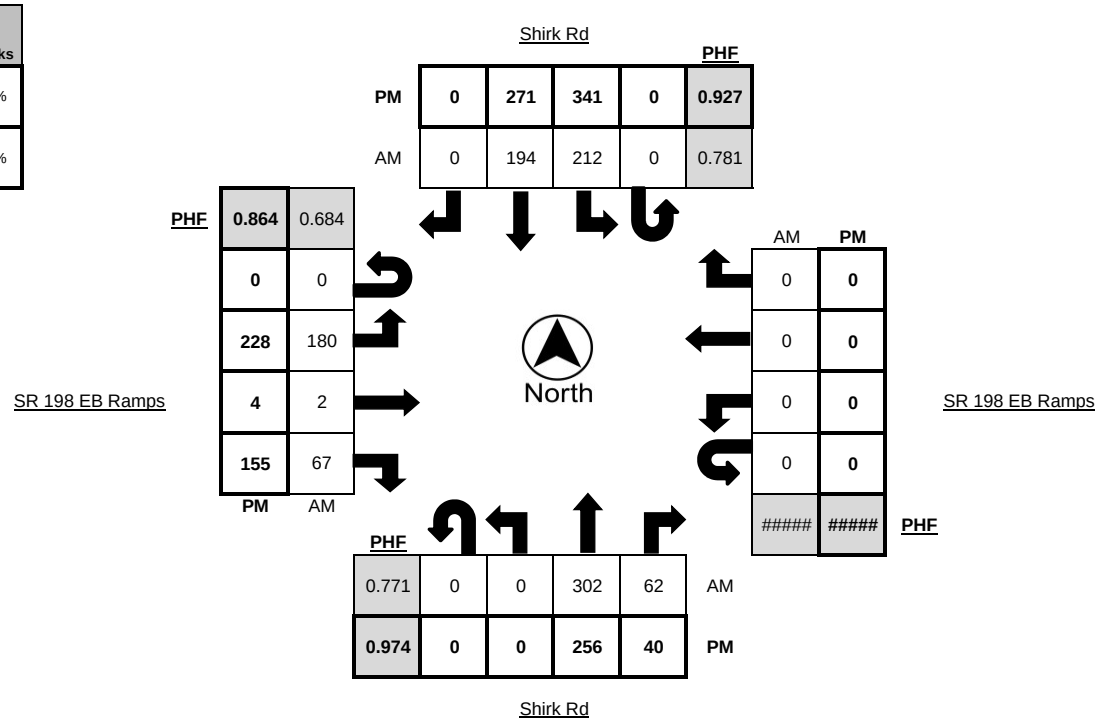
LOCATION Rd 92 @ SR 198 EB Ramps
LATITUDE 36.3265
COUNTY Tulare
LONGITUDE -119.3677
COLLECTION DATE Thursday, November 02, 2023
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
6:00 AM - 6:15 AM	0	0	37	5	0	0	18	21	0	1	0	15	0	3	3	0	0	0	0	0
6:15 AM - 6:30 AM	0	0	33	7	0	0	26	14	0	2	0	18	0	2	1	0	0	0	0	0
6:30 AM - 6:45 AM	0	0	48	4	0	0	20	23	0	1	0	27	1	7	2	0	0	0	0	0
6:45 AM - 7:00 AM	0	0	69	5	1	0	29	32	0	3	0	36	0	6	3	0	0	0	0	0
7:00 AM - 7:15 AM	0	0	48	7	0	0	42	34	0	4	0	38	1	12	4	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	74	10	1	0	36	45	0	3	0	33	0	13	3	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	85	22	1	0	62	57	0	6	0	40	1	20	5	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	95	23	0	0	72	58	0	6	0	69	0	22	4	0	0	0	0	0
TOTAL	**0**	**0**	**489**	**83**	**3**	**0**	**305**	**284**	**0**	**26**	**0**	**276**	**3**	**85**	**25**	**0**	**0**	**0**	**0**	**0**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	0	52	4	1	0	89	53	0	4	0	55	0	38	2	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	59	11	3	0	78	66	0	0	0	53	0	34	5	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	65	8	3	0	86	74	0	2	0	45	1	38	6	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	65	11	1	0	84	62	0	1	0	56	2	37	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	64	10	3	0	93	72	0	2	0	69	0	43	1	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	62	11	1	0	78	63	0	1	0	58	1	37	1	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	59	16	2	0	88	50	0	0	0	47	0	31	1	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	50	9	1	0	52	48	0	1	0	52	1	28	2	0	0	0	0	0
TOTAL	**0**	**0**	**476**	**80**	**15**	**0**	**648**	**488**	**0**	**11**	**0**	**435**	**5**	**286**	**18**	**0**	**0**	**0**	**0**	**0**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 8:00 AM	0	0	302	62	2	0	212	194	0	19	0	180	2	67	16	0	0	0	0	0
4:30 PM - 5:30 PM	0	0	256	40	8	0	341	271	0	6	0	228	4	155	8	0	0	0	0	0

	PHF	Trucks
AM	0.751	3.6%
PM	0.922	1.7%



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Turning Movement Report

Prepared For:

Ruettgers & Schuler Civil Engineers
1800 30th St, Ste 260
Bakersfield, CA 93301

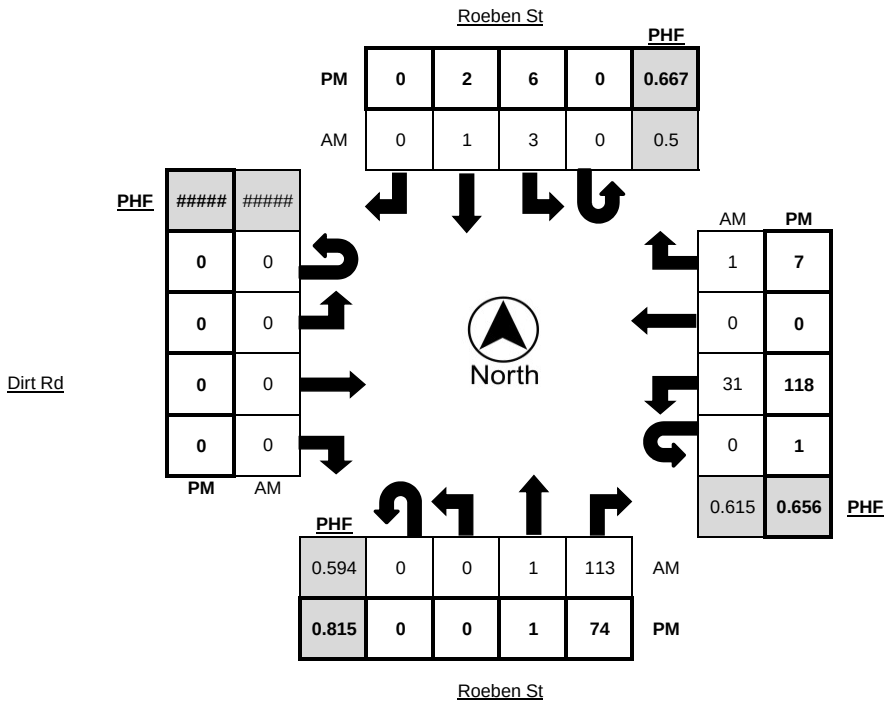
LOCATION Roeben St @ Tulare Ave
LATITUDE 36.3200
COUNTY Tulare
LONGITUDE -119.3586
COLLECTION DATE Thursday, November 02, 2023
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
6:00 AM - 6:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0
6:15 AM - 6:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM - 6:45 AM	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
6:45 AM - 7:00 AM	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0
7:00 AM - 7:15 AM	0	0	0	18	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0
7:15 AM - 7:30 AM	0	0	0	16	1	0	0	0	0	0	0	0	0	0	0	0	5	0	1	1
7:30 AM - 7:45 AM	0	0	0	32	0	0	2	0	0	1	0	0	0	0	0	0	10	0	0	0
7:45 AM - 8:00 AM	0	0	1	47	1	0	1	0	0	1	0	0	0	0	0	0	13	0	0	1
TOTAL	**0**	**0**	**2**	**134**	**2**	**0**	**3**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**48**	**0**	**1**	**2**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	0	1	18	0	0	0	3	0	0	0	0	0	0	0	0	22	0	0	0
4:15 PM - 4:30 PM	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	26	0	0	1
4:30 PM - 4:45 PM	0	0	0	17	0	0	2	2	0	0	0	0	0	0	0	0	21	0	2	0
4:45 PM - 5:00 PM	0	0	2	13	0	0	1	0	0	0	0	0	0	0	0	0	19	0	2	0
5:00 PM - 5:15 PM	0	0	0	8	0	0	2	1	0	0	0	0	0	0	0	0	45	0	3	1
5:15 PM - 5:30 PM	0	0	0	23	0	0	2	1	0	0	0	0	0	0	0	0	23	0	2	0
5:30 PM - 5:45 PM	0	0	1	22	0	0	0	0	0	0	0	0	0	0	0	0	23	0	2	0
5:45 PM - 6:00 PM	0	0	0	21	0	0	2	0	0	0	0	0	0	0	0	1	27	0	0	0
TOTAL	**0**	**0**	**4**	**136**	**0**	**0**	**9**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**206**	**0**	**11**	**2**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 8:00 AM	0	0	1	113	2	0	3	1	0	2	0	0	0	0	0	0	31	0	1	2
5:00 PM - 6:00 PM	0	0	1	74	0	0	6	2	0	0	0	0	0	0	0	1	118	0	7	1

	PHF	Trucks
AM	0.605	4.0%
PM	0.886	0.5%



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Turning Movement Report

Prepared For:
Ruettgers & Schuler Civil Engineers
1800 30th St, Ste 260
Bakersfield, CA 93301

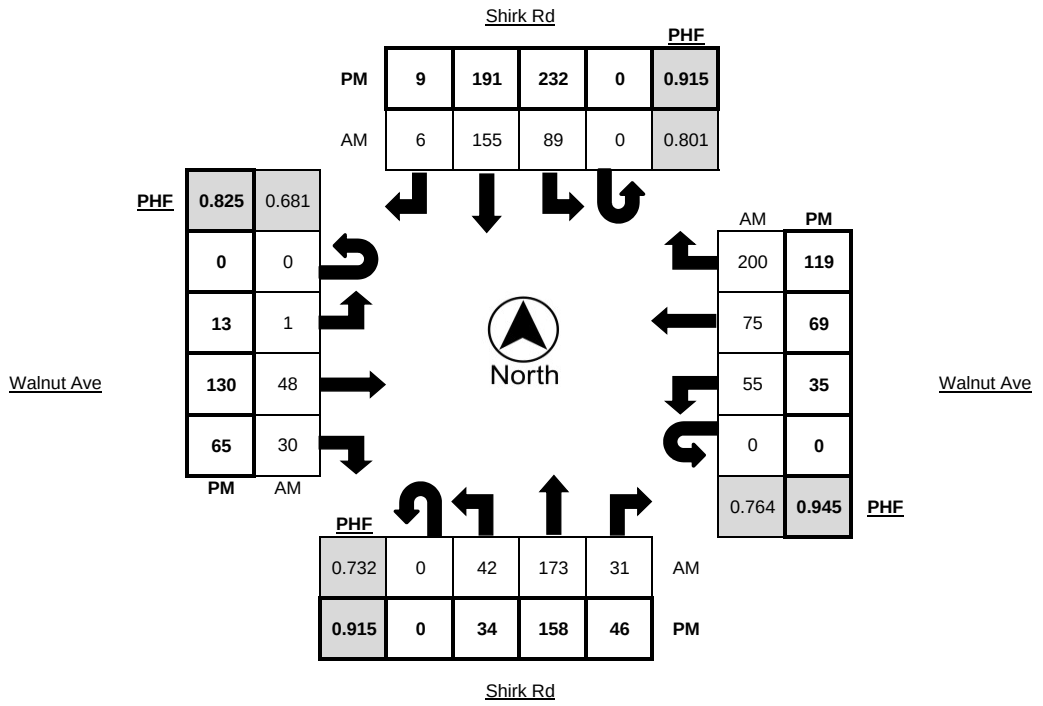
LOCATION Rd 92 @ Walnut Ave
LATITUDE 36.3127
COUNTY Tulare
LONGITUDE -119.3675
COLLECTION DATE Thursday, November 02, 2023
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
6:00 AM - 6:15 AM	0	3	18	0	1	0	3	17	0	1	0	0	3	0	0	0	2	8	26	0
6:15 AM - 6:30 AM	0	0	14	4	0	0	3	14	0	1	0	2	2	0	0	0	15	7	24	0
6:30 AM - 6:45 AM	0	5	25	0	0	0	4	18	2	2	0	0	2	2	1	0	8	22	29	0
6:45 AM - 7:00 AM	0	8	41	2	1	0	9	32	1	1	0	0	3	6	0	0	10	17	34	0
7:00 AM - 7:15 AM	0	7	29	8	1	0	13	28	1	1	0	0	11	4	0	0	5	11	33	0
7:15 AM - 7:30 AM	0	10	28	6	0	0	19	34	0	1	0	1	9	5	0	0	15	15	48	0
7:30 AM - 7:45 AM	0	20	49	5	1	0	31	45	2	1	0	0	9	11	0	0	16	26	66	0
7:45 AM - 8:00 AM	0	5	67	12	0	0	26	48	3	1	0	0	19	10	0	0	19	23	53	1
TOTAL	**0**	**58**	**271**	**37**	**4**	**0**	**108**	**236**	**9**	**9**	**0**	**3**	**58**	**38**	**1**	**0**	**90**	**129**	**313**	**1**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	8	36	5	0	0	44	43	3	2	0	2	27	17	0	0	13	15	22	1
4:15 PM - 4:30 PM	0	8	45	10	1	0	48	48	1	0	0	3	24	13	0	0	6	13	25	2
4:30 PM - 4:45 PM	0	9	37	12	4	0	67	49	2	1	0	1	23	22	1	0	7	20	31	1
4:45 PM - 5:00 PM	0	13	41	11	0	0	54	43	3	1	0	4	34	9	0	0	9	14	32	1
5:00 PM - 5:15 PM	0	6	37	13	1	0	56	47	3	2	0	5	39	19	0	0	9	17	33	1
5:15 PM - 5:30 PM	0	6	43	10	1	0	55	52	1	0	0	3	34	15	2	0	10	18	23	3
5:30 PM - 5:45 PM	0	8	48	15	0	0	40	37	4	0	0	0	27	11	0	0	11	17	30	0
5:45 PM - 6:00 PM	0	11	31	10	0	0	40	36	1	1	0	2	24	9	1	0	3	12	26	0
TOTAL	**0**	**69**	**318**	**86**	**7**	**0**	**404**	**355**	**18**	**7**	**0**	**20**	**232**	**115**	**4**	**0**	**68**	**126**	**222**	**9**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 8:00 AM	0	42	173	31	2	0	89	155	6	4	0	1	48	30	0	0	55	75	200	1
4:30 PM - 5:30 PM	0	34	158	46	6	0	232	191	9	4	0	13	130	65	3	0	35	69	119	6

	PHF	Trucks
AM	0.794	0.8%
PM	0.969	1.7%



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:
Ruettgers & Schuler Civil Engineers
1800 30th St, Ste 260
Bakersfield, CA 93301

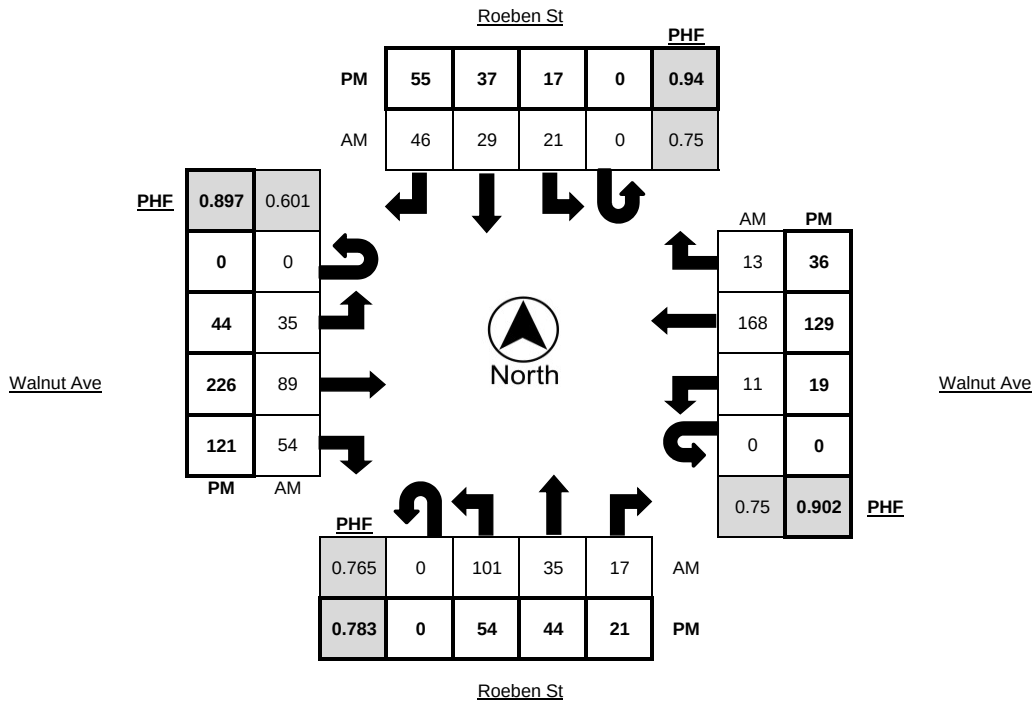
LOCATION Roeben St @ Walnut Ave
LATITUDE 36.3127
COUNTY Tulare
LONGITUDE -119.3586
COLLECTION DATE Thursday, November 02, 2023
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
6:00 AM - 6:15 AM	0	14	0	0	0	0	0	2	0	0	0	1	6	1	0	0	1	15	1	0
6:15 AM - 6:30 AM	0	14	1	2	0	0	1	2	4	0	0	3	6	5	0	0	0	17	0	0
6:30 AM - 6:45 AM	0	19	3	1	0	0	3	3	9	0	0	0	4	5	0	0	2	35	3	0
6:45 AM - 7:00 AM	0	19	7	1	0	0	1	4	14	0	0	6	3	3	0	0	1	28	2	0
7:00 AM - 7:15 AM	0	15	4	2	0	0	4	7	10	0	0	6	16	9	0	0	3	21	2	0
7:15 AM - 7:30 AM	0	23	7	3	0	0	4	9	9	0	0	4	16	13	0	0	1	42	0	0
7:30 AM - 7:45 AM	0	33	10	6	0	0	10	7	15	1	0	4	21	15	0	0	3	57	4	3
7:45 AM - 8:00 AM	0	30	14	6	0	0	3	6	12	1	0	21	36	17	1	0	4	48	7	0
TOTAL	**0**	**167**	**46**	**21**	**0**	**0**	**26**	**40**	**73**	**2**	**0**	**45**	**108**	**68**	**1**	**0**	**15**	**263**	**19**	**3**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	6	7	2	1	0	11	9	11	0	0	12	43	17	2	0	6	40	11	0
4:15 PM - 4:30 PM	0	14	8	3	1	0	2	14	12	1	0	7	56	20	1	0	4	24	9	1
4:30 PM - 4:45 PM	0	13	7	4	0	0	6	8	13	0	0	13	53	29	1	0	3	30	2	1
4:45 PM - 5:00 PM	0	14	7	2	1	0	3	8	14	0	0	14	57	30	0	0	5	26	10	0
5:00 PM - 5:15 PM	0	24	12	2	1	0	4	8	17	0	0	10	66	27	0	0	4	38	8	0
5:15 PM - 5:30 PM	0	11	12	4	1	0	5	10	11	1	0	10	65	34	1	0	3	30	9	1
5:30 PM - 5:45 PM	0	5	13	13	0	0	5	11	13	0	0	10	38	30	0	0	7	35	9	0
5:45 PM - 6:00 PM	0	14	8	4	0	0	5	14	9	0	0	11	39	23	0	0	5	19	10	0
TOTAL	**0**	**101**	**74**	**34**	**5**	**0**	**41**	**82**	**100**	**2**	**0**	**87**	**417**	**210**	**5**	**0**	**37**	**242**	**68**	**3**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 8:00 AM	0	101	35	17	0	0	21	29	46	2	0	35	89	54	1	0	11	168	13	3
4:45 PM - 5:45 PM	0	54	44	21	3	0	17	37	55	1	0	44	226	121	1	0	19	129	36	1

	PHF	Trucks
AM	0.759	1.0%
PM	0.913	0.7%



Traffic Accident Surveillance and Analysis System (TASAS)
Collision Data Summary

The data provided is protected by 23 U.S.C. § 407, and shall not be subject to discovery, nor admitted as evidence in any applicable legal proceeding against the State of California. By allowing the release of this information, the State of California, Department of Transportation does not waive any rights it has under 23 U.S.C. § 407.

Protected by 23 U.S.C. § 407

SR 198 PM 05.500 to PM 06.100

Table 1 summarizes collision rates for the SR 198 freeway ramps at Shirk Road interchange in the County of Tulare. The Table B reports were generated on April 17, 2024, and they depict existing collision rates per million vehicles for the most recent 36-month period from July 1, 2020, to June 30, 2023, from the Traffic Accident Surveillance and Analysis System (TASAS).

Table 1
TASAS Table B Collision Rates

06-Tul-198 PM 5.50/6.10	TOTAL No. of Collisions	ACTUAL (per million vehicles)			AVERAGE (per million vehicles)		
		Fatal Collisions	Fatal + Injury Collisions	Total (1)	Fatal Collisions	Fatal + Injury Collisions	Total (1)
PM 005.590 WB On From Shirk Road	0	0.000	0.00	0.00	0.002	0.23	0.63
PM 005.601 EB Off to Shirk Road	2	0.00	0.00	0.68	0.003	0.38	1.04
PM 005.901 EB On From Shirk Road	0	0.00	0.00	0.00	0.002	0.23	0.63
PM 005.965 WB Off to Shirk Road	0	0.00	0.00	0.00	0.003	0.38	1.04

(1) All reported collisions (includes Property Damage Only (PDO) Collisions)

Analysis of the TASAS Table B records shows 2 collisions within the EB off-ramp to Shirk Road and study periods summarized above. It reflects that the actual Fatal, Fatal + Injury, and Total collision rates are below the average for similar facilities statewide.

Detailed analysis per the TASAS Table B shows that the primary collision factors in the segment were:

- "Speeding" (2)

The types of collisions included:

- “Hit Object” (1), and
- “Rear End” (1)

The object hit in the “Hit Object” collision was reported as a dike or curb.

End of summary.
ER/CW

Protected by 23 U.S.C. § 407

PM Peak Hour Traffic Analysis

Street	2023		2023+Project Two-Way LOS		2028		2028+Project Two-Way LOS		2033 Two-Way LOS		2033+Project Two-Way LOS	
	VOL	LOS	VOL	LOS	VOL	LOS	VOL	LOS	VOL	LOS	VOL	LOS
Shirk St: Tulare Ave to Walnut Ave	722	C	753	C	854	C	870	C	1022	C	1054	C
Walnut Ave: Shirk St to Roeben St	-	C	-	C	159	C	184	C	205	C	250	C

AM Peak Hour Traffic Analysis

Street	2023		2023+Project Two-Way LOS		2028		2028+Project Two-Way LOS		2033 Two-Way LOS		2033+Project Two-Way LOS	
	VOL	LOS	VOL	LOS	VOL	LOS	VOL	LOS	VOL	LOS	VOL	LOS
Shirk St: Tulare Ave to Walnut Ave	624	C	648	C	733	C	749	C	870	C	879	C
Walnut Ave: Shirk St to Roeben St	-	C	-	C	150	C	166	C	207	C	234	C

Appendix E

Agricultural Mitigation Memo

ELLIOT PROPERTY

Agricultural Mitigation Memo

MITIGATION

Mitigation Measure AG-1: Following *Visalia Municipal Code Chapter 18.04: Agricultural Land Preservation Program,* the developer will acquire a minimum of 43.11 acres of Prime Farmland or Farmland of Statewide Importance. This land will be located in the southern San Joaquin Valley, but outside of Visalia's Sphere of Influence. This farmland will be preserved for long-term agricultural uses.

California Farmland Mapping and Monitoring Program (FMMP)

The FMMP is implemented by the California Department of Conservation (DOC) to conserve and protect agricultural lands within the State. Land is included in this program based on soil type, annual crop yields, and other factors that influence the quality of farmland. The FMMP mapping categories for the most important statewide farmland are as follows:

- *Prime Farmland* has the ideal physical and chemical composition for crop production. It has been used for irrigated production in the four years prior to classification and can produce sustained yields. 51% of the Visalia Planning Area is classified as Prime Farmland.
- *Farmland of Statewide Importance* has also been used for irrigated production in the four years prior to classification and is only slightly poorer quality than Prime Farmland. 11% of the Visalia Planning Area is classified as Farmland of Statewide Importance.
- *Unique Farmland* has been cropped in the four years prior to classification and does not meet the criteria for Prime Farmland or Farmland of Statewide Importance but has produced specific crops with high economic value. Less than 1% of the Visalia Planning Area is classified as Unique Farmland.
- *Farmland of Local Importance* encompasses farmland that does not meet the criteria for the previous three categories. These may lack irrigation, produce major crops, be zoned as agricultural, and/or support dairy. 2% of the Visalia Planning Area is classified as Farmland of Local Importance.

Visalia Municipal Code Chapter 18.04: Agricultural Land Preservation Program

Chapter 18.04 of the Visalia Municipal Code details the Agricultural Land Preservation Program (Program) in Visalia. The agricultural land preservation program intends to establish a process for the required preservation of agricultural land through the acquisition of agricultural conservation easements or the payment of an in-lieu fee for projects.

Easement Acquisition: The applicant shall convey, or arrange for the conveyance of, an area of land meeting its preserved land obligation to a qualified entity for execution of an agricultural conservation easement thereon. This shall include the conveyance of land within an agricultural land mitigation bank.

Determination of Preserved Land Obligation: The preserved land obligation shall be calculated at a ratio of one acre of preserved land for each acre of converted land. Converted land acreage shall be calculated by determining the applicable project acreage less the acreage of exclusions.

All projects authorized by the City that would result in the conversion of prime farmland or farmland of statewide importance are subject to the provisions detailed in the Program. Projects can be exempt or excluded from the Program due to:

1. *Location.* Projects, or portions thereof, located on lands that are not within the Tier II Urban Development Boundary or the Tier III Urban Growth Boundary.
2. *Size.* Projects of five acres or less in gross area. The City may disallow the use of this exemption if it finds that the subject property has been subdivided into five-acre or smaller parcels in whole or in part to avoid the preserved land obligation in accordance with this chapter.
3. *Prior Compliance.* Projects on sites that have demonstrated compliance with the provisions of this chapter for affected acreage.

Projects consistent with any of the following criteria are not subject to the provisions of this chapter and shall be excluded from the preserved land obligation Such exclusions may comprise the entire project area or may be a portion of the project area acreage. Only such portions of the project area that falls within any of the following categories shall be excluded.

1. *Farmland Designation.* Acreage not designated as prime farmland or farmland of statewide importance on the most recent Farmland Mapping and Monitoring Program (FMMP) map published by the California Department of Conservation.
2. *Farmland Designation.* Acreage that may be designated as prime farmland or farmland of statewide importance on the most recent Farmland Mapping and Monitoring Program (FMMP) map published by the California Department of Conservation but meets at least one of the following standards.
    - Land Use. The land is not currently and has not been used for irrigated agricultural production for a minimum of four consecutive calendar years.
    - Soils. The soil type is not listed on the Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance for Tulare County, as maintained by the Department of Conservation for purposes of the FMMP.
3. *Project Type or Use.* The following projects are exempt from the Program:
    - Affordable housing projects that comply with State Density Bonus Law.
    - Agricultural processing uses.
    - Agricultural buffers.
    - Public facilities.
    - Roadways.

Eligibility of Land for Easement. The preserved land shall meet all the following requirements to be eligible for placement in an agricultural conservation easement:

1. The preserved land shall be in the southern San Joaquin Valley, with preference afforded to preserved land located within 10 miles of the City limits. The preserved land must be located outside any city's limits and sphere of influence.
2. The preserved land shall be designated as prime farmland or farmland of statewide importance on the most recently published FMMP map.
3. The preserved land shall be a minimum of 20 contiguous acres in size.
4. The preserved land shall be zoned and planned for agricultural uses consistent with the purposes of an agricultural conservation easement.
5. The preserved land shall have at least one verified source of water.
6. The preserved land shall not be encumbered by any use or structure that would be incompatible with the purpose of the agricultural conservation easement. Such uses shall be deducted from the total acreage being preserved.

Eligibility of In-Lieu Fee Payment. To be eligible for payment of an in-lieu fee to satisfy the preserved land obligation, either of the following standards must be met.

1. The total preserved land obligation is less than 20 acres.
2. If the total preserved land obligation is 20 acres or more, the applicant must demonstrate at least one of the following to the satisfaction of the City:
    a. No qualified entity exists;
    b. The applicant has met with all qualified entities and all such entities are unable or unwilling to assist with the acquisition of an agricultural conservation easement, as certified in writing to the City; or
    c. Working with a qualified entity, the applicant has made at least one good faith offer to purchase an agricultural conservation easement, but any and all such offers have been declined by the potential seller, as certified in writing to the City.

City of Visalia General Plan

The 2030 General Plan includes the policies related to agricultural resources that correlate to the proposed Project:

- *LU-P-14*: Recognize the importance of agriculture-related business to the City and region, and support the continuation and development of agriculture and agriculture related enterprises in and around Visalia by:
    - Implementing growth boundaries and cooperating with the County on agricultural preservation efforts;
    - Accommodating agriculture-related industries in industrial districts;
    - Facilitating successful farmers' markets;
    - Helping to promote locally grown and produced agricultural goods, and the image of Visalia and Tulare County as an agricultural region.
- *LU-P-19*: Ensure that growth occurs in a compact and concentric fashion by implementing the General Plan's phased growth strategy.

- *LU-P-21*: Allow annexation and development of residential, commercial, and industrial land to occur within the Tier II UDB and the Tier III Urban Growth Boundary consistent with the City's Land Use Diagram, according to the stated phasing thresholds.
- *LU-P-30*: Maintain greenbelts, or agricultural/open space buffer areas, between Visalia and other communities by implementing growth boundaries and working with Tulare County and land developers to prevent premature urban growth north of the St. Johns River and in other sensitive locations within the timeframe of this General Plan.
- *LU-P-31*: Promote the preservation of permanent agricultural open space around the City by protecting viable agricultural operations and land within the City limits in the airport and wastewater treatment plant environs.
- *LU-P-32*: Continue to maintain a 20-acre minimum for parcel map proposals in areas designated for Agriculture to encourage viable agricultural operations in the Planning Area.
- *OSC-P-27*: To allow efficient cultivation, pest control and harvesting methods; require buffer and transition areas between urban development and adjoining or nearby agricultural land.
- *OSC-P-28*: Require new development to implement measures, as appropriate, to minimize soil erosion related to grading, site preparation, landscaping, and construction.

Tulare County General Plan

The 2030 Tulare County General Plan contains following policies related to agricultural resources that correlate to the proposed project:

- *AG-1.1*: The County shall maintain agriculture as the primary land use in the valley region of the County, not only in recognition of the economic importance of agriculture, but also in terms of agriculture's real contribution to the conservation of open space and natural resources.
- *AG-1.6*: The County shall consider developing an Agricultural Conservation Easement Program (ACEP) to help protect and preserve agricultural lands (including "Important Farmlands"), as defined in this Element. This program may require payment of an in-lieu fee sufficient to purchase a farmland conservation easement, farmland deed restriction, or other farmland conservation mechanism as a condition of approval for conservation of important agricultural land to non-agricultural use. If available, the ACEP shall be used for replacement lands determined to be of statewide significance (Prime or other Important Farmlands), or sensitive and necessary for the preservation of agricultural land, including land that may be a part of a community separator as part of a comprehensive program to establish community separators. The in-lieu fee or other conservation mechanism shall recognize the importance of land value and shall require equivalent mitigation.
- *AG*-1.7: The County shall promote the preservation of its agricultural economic base and open space resources through the implementation of resource management programs such as the Williamson Act, Rural Valley Lands Plan, Foothill Growth Management Plan or similar types of strategies and the identification of growth boundaries for all urban areas located in the County.
- *AG-1.8*: The County shall not approve applications for preserves or regular Williamson Act contracts on lands located within a UDB and/or HDB unless it is demonstrated that the restriction of such land will not detrimentally affect the growth of the community involved for the succeeding 10 years, that the property in question has special public values for open space, conservation, other comparable uses, or that the contract is consistent with the publicly

desirable future use and control of the land in question. If proposed within a UDB of an incorporated city, the County shall give written notice to the affected city pursuant to Government Code §51233.

- *AG-1.10*: The County shall oppose extension of urban services, such as sewer lines, water lines, or other urban infrastructure, into areas designated for agriculture use unless necessary to resolve a public health situation. Where necessary to address a public health issue, services should be located in public rights-of-way in order to prevent interference with agricultural operations and to provide ease of access for operation and maintenance. Service capacity and length of lines should be designed to prevent the conversion of agricultural lands into urban/suburban uses.
- *AG-1.11*: The County shall examine the feasibility of employing agricultural buffers between agricultural and non-agricultural uses, and along the edges of UDBs and HDBs. Considering factors include the type of operation and chemicals used for spraying, building orientation, planting of trees for screening, location of existing and future rights-of-way (roads, railroads, canals, power lines, etc.), and unique site conditions.
- *LU-1.8*: The County shall encourage and provide incentives for infill development to occur in communities and hamlets within or adjacent to existing development in order to maximize the use of land within existing urban areas, minimize the conversion of existing agricultural land, and minimize environmental concerns associated with new development.
- *LU-2.1*: The County shall maintain agriculturally-designated areas for agriculture use by directing urban development away from valuable agricultural lands to cities, unincorporated communities, hamlets, and planned community areas where public facilities and infrastructure are available.
- *PF-1.2*: The County shall ensure that urban development only takes place in the following areas:
    - Within incorporated cities and CACUDBs
    - Within the UDBs of adjacent cities in other counties, unincorporated communities, planned community areas, and HDBs of hamlets
    - Within foothill development corridors as determined by procedures set forth in Foothill Growth Management Plan
    - Within areas set aside for urban use in the Mountain Framework Plan and the mountain sub-area plans; and
    - Within other areas suited for non-agricultural development, as determined by the procedures set forth in the Rural Valley Lands Plan.
- *PF-1.3*: The County shall encourage those types of urban land uses that benefit from urban services to develop within UDBs and HDBs. Permanent uses which do not benefit from urban services shall be discouraged within these areas. This shall not apply to agricultural or agricultural support uses, including the cultivation of land or other uses accessory to the cultivation of land provided that such accessory uses are time-limited through Special Use Permit procedures.
- *PF-1.4*: The County shall encourage urban development to locate in existing UDBs and HDBs where infrastructure is available or may be established in conjunction with development. The County shall ensure that development does not occur unless adequate infrastructure is available, that sufficient water supplies are available or can be made available, and that there are adequate provisions for long term management and maintenance of infrastructure and identified water supplies.

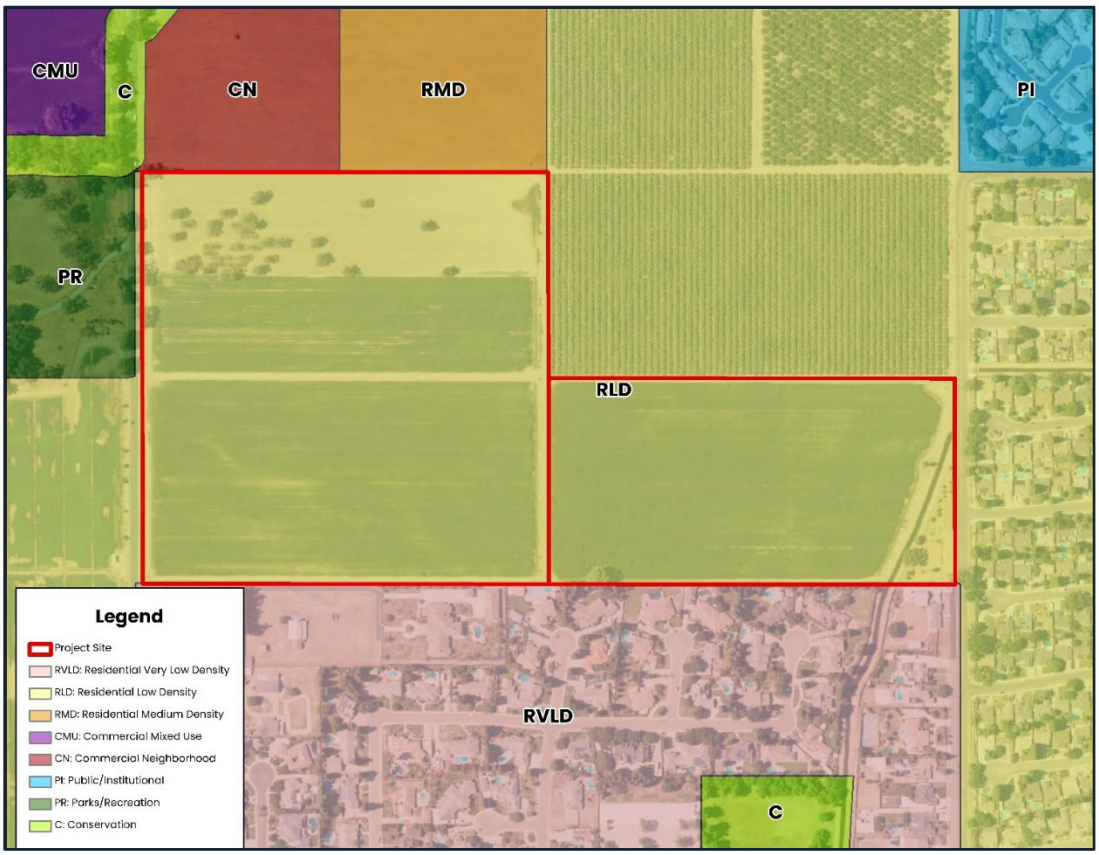
EXISTING FARMLAND

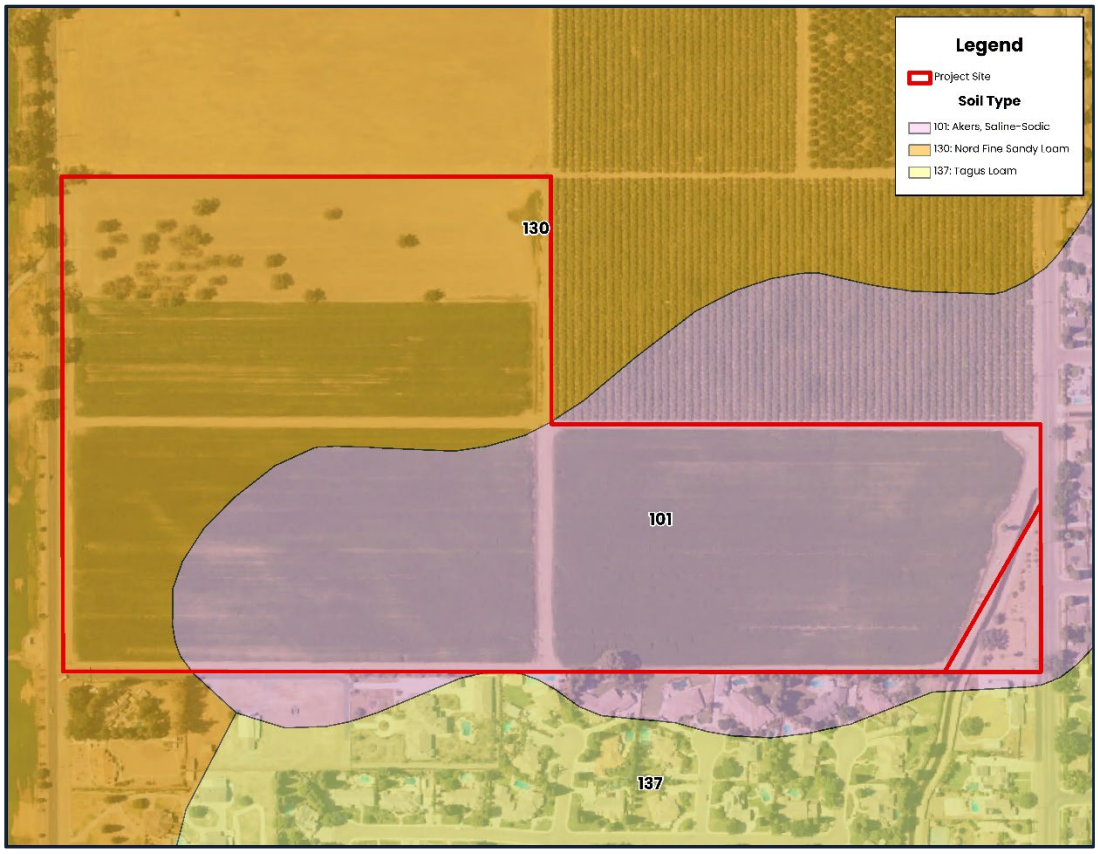
The proposed Project Site is located within the City of Visalia Planning Area in Tulare County. The Site is west of S Roeben Street, east of S Shirk Road, and south of Tulare Street. The Site is approximately 3.5 miles southwest of the Visalia downtown. The Project involves construction on APNs 087-010-006 and 087-010-008. The Site is topographically flat, with agricultural uses to the north and west and single-family housing to the south and east. The Site is zoned AE-20 (Exclusive Agriculture, 20 Acre Minimum Site Area) by Tulare County but will be zoned R-1-5, Single Family Residential, 5,000 square foot minimum site area, by the City of Visalia, pending annexation. The Visalia General Plan Designation is Low-Density Residential. The Site contains agricultural uses, vacant land, and an oak grove.

The site is 59.13 acres in total. 57.82 acres are designated as Prime Farmland by the 2018 FMMP. The remaining 1.31 acres are designated as Urban and Built-Up Land. Although the site is mostly Prime Farmland, it is designated for Low-Density Residential uses by the Visalia General Plan. The proposed project will follow this designation.

Visalia is planning for growth in this area due to its proximity to similar uses. Single-family homes currently exist to the east and south of the site. Farmland currently exists to the north and west of the site, however, these farmlands are designated as Low-Density Residential, Medium Density Residential, Neighborhood Commercial, and Parks/Recreation by the Visalia General Plan. The site borders the existing Visalia City boundaries to the east and is located within Visalia's Tier 2 Urban Development Boundary. These factors, along with the existing infrastructure and development in the surrounding area, make this site an ideal location for annexation and new development.



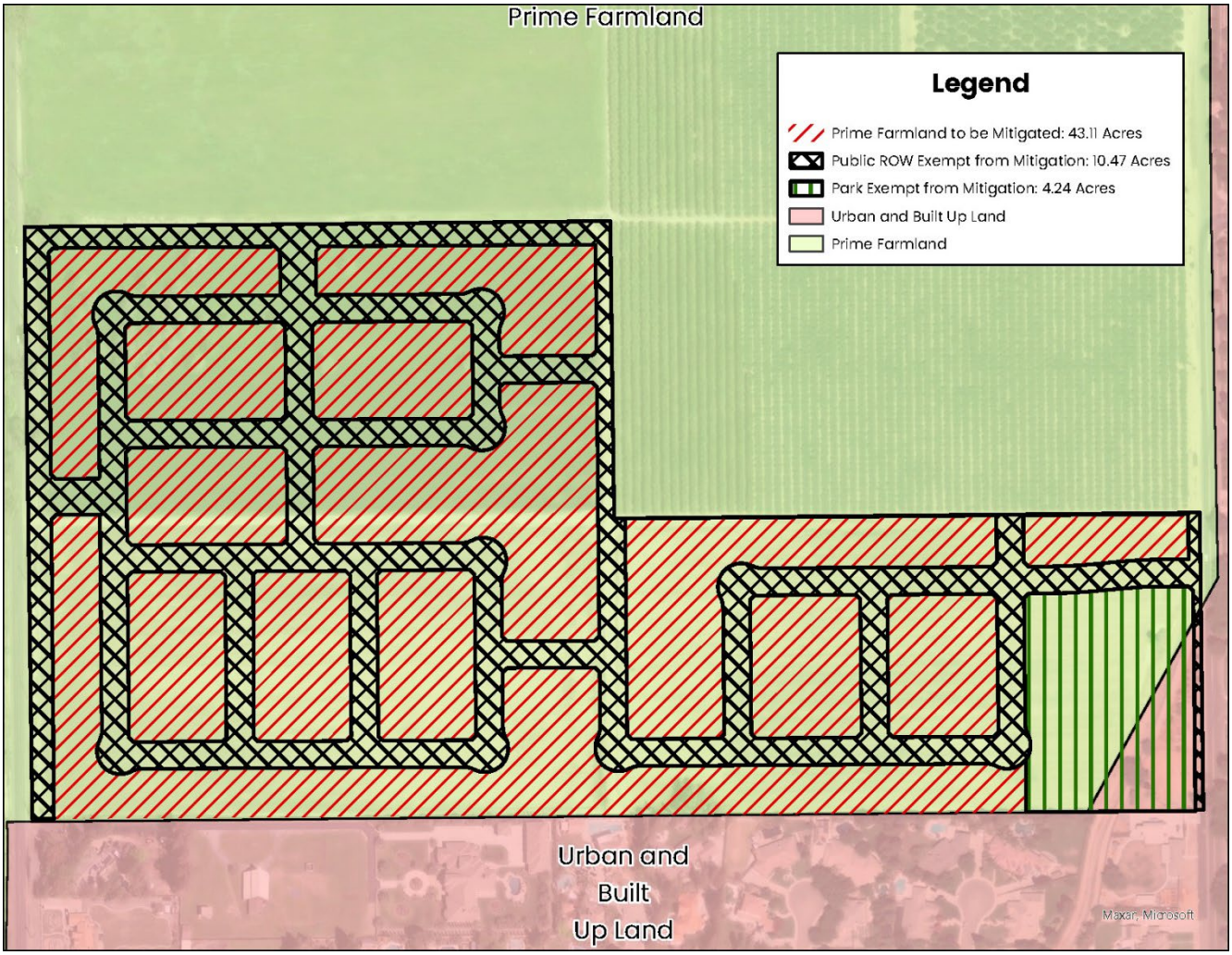

CMU
C
CN
RMD
PI
PR
RLD
RVLD
C
Legend
Project Site
RVLD: Residential Very Low Density
RLD: Residential Low Density
RMD: Residential Medium Density
CMU: Commercial Mixed Use
CN: Commercial Neighborhood
PI: Public/Institutional
PR: Parks/Recreation
C: Conservation


Legend
Project Site
Soil Type
101: Akers, Saline-Sodic
130: Nord Fine Sandy Loam
137: Tagus Loam
130
101
137

4CREEKS

MITIGATED FARMLAND

The Project Site is not exempt from the Program. The Site is within the Tier 2 UBD and is larger than five acres. Following the Program's policies, the 1.31 acres designated as Urban and Built-up land will be exempt. The remaining 57.82 acres are Prime Farmland, which has been used for irrigated agricultural production in the past four years. However, of these 57.82 acres, 10.47 will be roadways and 4.24 acres will be a public park. According to the Program, public facilities, including roadways and parks, are excluded from the mitigation. The remaining 43.11 acres will need to be mitigated.



The farmland for the mitigation would follow all requirements set out in the Visalia Municipal Code Chapter 18.04. This includes:

1. The preserved land will be in the southern San Joaquin Valley and will be outside Visalia's City Limits/Sphere of Influence.
2. The preserved land will designated as prime farmland.
3. The preserved land shall be a minimum of 20 contiguous acres in size.
4. The preserved land will be zoned and planned for agricultural uses consistent with the purposes of an agricultural conservation easement.
5. The preserved land will have at least one verified source of water.

6. The preserved land will not be encumbered by any use or structure that would be incompatible with the purpose of the agricultural conservation easement.

IMPACTS OF PROJECT

The Project Site is currently occupied by agricultural land with field crops. Implementation of the proposed Project would result in the permanent conversion of approximately 57.82 acres of Prime Farmland to non-agricultural uses.

The loss of Prime Farmland on the Project Site would result in the decrease of Important Farmland inventory in the Visalia Planning Area. The Visalia Planning Area currently has an Important Farmland inventory of 43,155 acres, 33,991 acres of which were categorized as Prime Farmland. Implementation of the Project would convert 57.82 acres of Prime Farmland, which would result in a 0.13 percent decrease in the total Important Farmland inventory of the Visalia Planning Area and a 0.17 percent decrease in the Prime Farmland inventory.

Mitigation Measure AG-1 will secure 43.11 acres of permanent Prime Farmland outside of Visalia's development boundaries to reduce this impact.

BENEFITS OF PROJECT AND MITIGATION

While the Project will impact the farmland inventory, it will bring benefits to Visalia. The Project will add new housing close to the existing City. This will reduce the need for housing further away, which would potentially add transportation and infrastructure impacts. Additionally, separating farmland from existing residential neighborhoods is ideal for both the farmland and neighborhoods. It will reduce the amount of noise in the neighborhoods and reduce the potential for pollution on the farmland. This Project and mitigation will secure permanent farmland outside of Visalia's development boundaries. This will ensure that the agricultural uses will exist long-term and will not be impacted in the future.

ALTERNATIVES

Reduced Project Size

To remain under the Program's requirements, the Project would need to develop on less than 20 acres of Prime Farmland. If only 20 acres of the Prime Farmland were developed, the Project would be reduced to approximately 76 homes. This will reduce the amount of available housing in Visalia. This will not help Visalia's housing goals and will lead to development in other areas.

No Project

The No Project alternative would leave the site as it currently is. This would preserve the existing Prime Farmland; however, it would not add housing to Visalia. This will not help Visalia's housing goals and will lead to development in other areas. As previously discussed, this is an ideal location for new development and annexation into the City of Visalia. If the onsite farmland is preserved, it will eventually be surrounded by new development due to General Plan land designations and Visalia's housing demands.

Appendix F

Biochemical Oxygen Demand and Total Suspended Solids Calculations

April 5, 2024
Community Development Department
Planning Department
315 E. Acequia Ave.
Visalia, CA 93291

Re: Elliott Subdivision – Biochemical Oxygen Demand and Total Suspended Solids Calculations

To Whom It May Concern,

We have prepared the calculations below using the best available standards and practices that were able to find. Our calculations reference a report prepared by Provost and Prichard titled Local Discharge Limits Development, that was prepared for the City of Visalia in March 2011, see Appendix A. We have also utilized the City of Visalia's Sewer Master Plan, December 2005, to calculate an assumed volume of effluent for the proposed project. See below for the equation that will be utilized to calculate the assumed BOD and TSS that will be generated by the proposed project.

Equation 1 – AHL based on WDR limits

$$AHL_{wdr} = \frac{(8.34)(C_{wdr})(Q_{wwtf})}{(1-R_{wwtf})}$$

Where:

AHL_{wdr} = AHL based on WDR limit, lb/day
C_{wdr} = WDR permit limit, mg/L
Q_{wwtf} = WWTF average flow rate, MGD
R_{wwtf} = Plant removal efficiency, as decimal
8.34 = Conversion factor

Table 3-2 shows the allowable headworks loading for the POCs based upon the limitations contained in the WDR.

Table 3-2: WDR Based AHLs

Pollutant	WWTF Flow (MGD) (Qwwtf)	WDR Limit (mg/l) (Cwdr)	Select Removal Efficiency (from list)	Removal Efficiency (%) (Rwwtf)	Allowable Headworks (lbs/day)
Lead	12.18	0.05	User Entered	62.19	13.434
Ammonia	12.18	25	User Entered	43.89	4525.7652
BOD	12.18	30	User Entered	98.81	256354.5218
TSS	12.18	30	User Entered	98.65	226555.1037

324 S Santa Fe St Suite A
Visalia, CA 93292
559-802-3052
info@4-creeks.com

Elliott Subdivision is a new project being proposed by San Joaquin Valley Homes. The project is Located on Shirk Street, south of Highway 198. The project is proposing to develop 60 Gross Acres into a residential subdivision. Using Table 3.4 from the City of Visalia's Sewer Master Plan, the expected flow rates can be calculated using the Adjusted Flow Coefficients that have been provided.

Table 3.4 Average Sewer Flow Coefficients
Sewer System Master Plan
City of Visalia

Land Use Designation	Land Use Code	Urban Development Boundary [1,2] (ga)	Existing Sewered Service Area [3,4] (ga)	% of Total Service Area (%)	1994 Flow Coeff [5] (gpd/ga)	Calculated Flows (gpd)	Adjusted Flow Coefficient (gpd/ga)	2003 ADWF Balance (gpd)	% of Total ADWF (%)
Residential									
Rural	RA	1,007	413	2%	500	206,390	400	165,112	1%
Low Density	RLD	14,138	8,423	43%	1,000	8,422,750	800	6,738,200	55%
Medium Density	RMD	879	536	3%	1,800	964,296	1,300	696,436	6%
High Density	RHD	315	165	1%	2,500	413,200	2,000	330,560	3%
Commercial									
Commercial	COM	3,499	2,183	11%	1,000	2,183,180	650	1,419,067	12%

Table 1: Breakdown of Land Use for Phase 1

Land Use	Acreage	Adjusted Flow Coefficient	Expected Flow	Unit
Low Density Residential	60	800	48000	GPD
			Total Expected Flow: 48000 GPD	

Utilizing the equation and coefficients previously provided, we can calculate BOD as Follows:

$$AHL_{wdr} = \frac{(8.34)(C_{wdr})(Q_{wwtf})}{(1 - R_{wwtf})}$$

Where:

$$C_{wdr} = 30$$
$$Q_{wwtf} = .048\ MGD$$
$$R_{wwtf} = .9881$$

$$\boldsymbol{BOD = 1009.21\ Lb/Day}$$

324 S Santa Fe St Suite A
Visalia, CA 93292
559-802-3052
info@4-creeks.com

Utilizing the equation and coefficients previously provided, we can calculate TSS as Follows

$$AHL_{wdr} = \frac{(8.34)(C_{wdr})(Q_{wwtf})}{(1 - R_{wwtf})}$$

Where:

$$C_{wdr} = 30$$
$$Q_{wwtf} = .048\ MGD$$
$$R_{wwtf} = .9865$$

$$\boldsymbol{TSS = 889.60\ Lb/Day}$$

Please review the calculations provided and if there are any additional questions or information needed, please feel free to contact me at (559)802-3052.

Jonathan J. Frausto
Project Manager

324 S Santa Fe St Suite A
Visalia, CA 93292

559-802-3052
info@4-creeks.com

Appendix A

324 S Santa Fe St Suite A
Visalia, CA 93292

559-802-3052
info@4-creeks.com

Department of Toxic Substances Control

Meredith Williams, Ph.D.
Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Yana Garcia
Secretary for
Environmental Protection

Gavin Newsom
Governor

SENT VIA ELECTRONIC MAIL

July 03, 2024

Cristobal Carrillo
Associate Planner
City of Visalia, Planning & Community Preservation Department
315 E. Acequia Avenue
Visalia. CA 93291
cristobal.carrillo@visalia.city

RE: MITIGATED NEGATIVE DECLARATION FOR THE ANNEXATION NO. 2024-01 AND ELLIOTT TENTATIVE SUBDIVISION MAP NO. 5597 PROJECT DATED JUNE 27, 2024, STATE CLEARINGHOUSE NUMBER 2024061280

Dear Cristobal Carrillo,

The Department of Toxic Substances Control (DTSC) received a Mitigated Negative Declaration for the Annexation No. 2024-01 and Elliott Tentative Subdivision Map No. 5597 project (project). The proposed project is divided into two parts. The first part is the Annexation No. 2024-01 requested by Jonathan Frausto/San Joaquin Valley Homes to annex two parcels totaling approximately 59.13-acres into the city limits of Visalia. Upon annexation the area would be zoned R-1-5 (Single-Family Residential, 5,000 square foot minimum site area), which is consistent with the General Plan Land Use Designation of Residential Low Density. Secondly, the Elliot Tentative Subdivision Map No. 5597: requested by Jonathan Frausto/San Joaquin Valley Homes to subdivide two parcels totaling approximately 59.13-acres into 225 lots for single-family residential use

and additional out lots for landscaping and a neighborhood park, to be located within the R-1-5 (Single-Family Residential, 5,000 square foot minimum site area) zone.

After reviewing the Project, DTSC recommends and requests consideration of the following comments:

1. When agricultural crops and/or land uses are proposed or rezoned for residential use, a number of contaminants of concern (COCs) can be present. The Lead Agency shall identify the amounts of Pesticides and Organochlorine Pesticides (OCPs) historically used on the property. If present, OCPs requiring further analysis are Dichlorodiphenyltrichloroethane, toxaphene, and dieldrin. Additionally, any level of arsenic present would require further analysis and sampling and must meet HHRA NOTE NUMBER 3, DTSC-SLs approved thresholds. If they are not, remedial action must take place to mitigate them below those thresholds.
2. Additional COCs may be found in mixing/loading/storage areas, drainage ditches, farmhouses, or any other outbuildings and should be sampled and analyzed. If smudge pots had been routinely utilized, additional sampling for Polycyclic Aromatic Hydrocarbons and/or Total Petroleum Hydrocarbons may be required
3. If buildings or other structures are to be demolished on any project sites included in the proposed project, surveys should be conducted for the presence of lead-based paints or products, mercury, asbestos containing materials, and polychlorinated biphenyl caulk. Removal, demolition, and disposal of any of the above-mentioned chemicals should be conducted in compliance with California environmental regulations and policies. In addition, sampling near current and/or former buildings should be conducted in accordance with DTSC's Preliminary Endangerment Assessment (PEA) Guidance Manual.
4. DTSC recommends that all imported soil and fill material should be tested to assess any COCs meet screening levels as outlined in the PEA Guidance Manual. Additionally, DTSC advises referencing the DTSC Information

Advisory Clean Imported Fill Material Fact Sheet if importing fill is necessary. To minimize the possibility of introducing contaminated soil and fill material there should be documentation of the origins of the soil or fill material and, if applicable, sampling be conducted to ensure that the imported soil and fill material are suitable for the intended land use. The soil sampling should include analysis based on the source of the fill and knowledge of the prior land use. Additional information can be found by visiting DTSC's Human and Ecological Risk Office (HERO) webpage.

DTSC appreciates the opportunity to comment on the MND for the Annexation No. 2024-01 and Elliott Tentative Subdivision Map No. 5597 project. Thank you for your assistance in protecting California's people and environment from the harmful effects of toxic substances. If you have any questions or would like clarification on DTSC's comments, please respond to this letter or via email for additional guidance.

Sincerely,

Tamara Purvis

Tamara Purvis
Associate Environmental Planner
HWMP - Permitting Division – CEQA Unit
Department of Toxic Substances Control
Tamara.Purvis@dtsc.ca.gov

cc: (via email)

Governor's Office of Planning and
Research State Clearinghouse
State.Clearinghouse@opr.ca.gov

Steven Macias
Engineering Manager - Project Applicant
San Joaquin Valley Homes
smacias@sjvhomes.com

Jonathan Frausto
Project Manager
4Creeks Consulting Firm
jonathanf@4-creeks.com

Dave Kereazis
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HWMP-Permitting Division – CEQA Unit
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Dave.Kereazis@dtsc.ca.gov

Scott Wiley
Associate Governmental Program Analyst
HWMP - Permitting Division – CEQA Unit
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Scott.Wiley@dtsc.ca.gov

California Department of Transportation

DISTRICT 6 OFFICE
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(559) 840-6066 | FAX (559) 488-4195 | TTY 711
www.dot.ca.gov

July 16, 2024

TUL-198-5.927
MND/IS
ELLIOT SUBDIVISION
TENTATIVE SUBDIVISION MAP #5597
GTS: 02833

SENT VIA EMAIL

Mr. Cristobal Carrillo, Associate Planner
City of Visalia, Planning and
Community Preservation Dept. - Planning Division
315 East Acequia Avenue
Visalia, CA 93291

Dear Mr. Carrillo:

Thank you for the opportunity to review the Mitigated Negative Declaration/Initial Study (MND/IS) for the Elliot Subdivision proposing to divide 59.13 acres into 225 residential units (Project). The Project is located on the south side of Tulare Avenue, between Road 92 (Shirk Road) and Roeben Street, approximately ½ mile south of the State Route (SR) 198/Road 92 (Shirk Road) interchange, in the City of Visalia.

Caltrans provides the following comments consistent with the State's smart mobility goals that support a vibrant economy and sustainable communities:

1. The MND Transportation section XVII, (pg. 3-114) identifies that a Traffic Impact Study (TIS) was prepared for the Project in Appendix D of the MND and concluded that the Project would not result in a significant increase in vehicle or truck trips. Table 3-18 in the MND shows the estimated vehicle trips generated for the Project is expected to generate approximately 2,119 daily trips, including 155 AM peak hour trips (39 inbound, 116 outbound) and 212 PM peak hour trips (134 inbound, 78 outbound).

2. Caltrans reviewed and provided comments on the TIS in a letter dated June 13, 2024, submitted to the City.

3. The MND includes the mitigation measures TRAN-1 that indicates based on the results of the Level of Service (LOS) analysis and the eight-hour vehicular volume warrants, *signals* shall be constructed at three intersections by 2028 to operate at an acceptable level of service by year 2033. The Project will pay its fair share of

traffic impact fees for the signals at the following intersections:

a. Shirk Street and SR 198 WB Ramps.

b. Shirk Street and SR 138 EB Ramps. (*Please note that the State Route indicated needs to be revised from SR 138 to SR 198*)

c. Shirk Street and Walnut Avenue.

4. An evaluation of Project vehicle miles traveled (VMT) was conducted based on VMT analysis guidelines adopted by the City of Visalia. The guidelines provide "screening thresholds" for identifying whether a land use project should be expected to result in a less than significant transportation impact under CEQA. Projects meeting one or more of these criteria would not be required to undergo a detailed VMT analysis. One of the screening criteria is "Project Location Screening". Development projects that are in a low VMT zone would be expected to generate similar low vehicle miles travelled. Using the City of Visalia online VMT screening application, the project was determined to be in TAZ 1358. Utilizing the "VMT Per Capita" metric due to residential project, the average VMT was determined to be 8.61 miles per capita. The average VMT per service population for Tulare County is 11.9. Therefore, the project is determined to be in a low VMT zone, and the project would be expected to result in a less than significant transportation impact under CEQA, per MND Figures 3-8 and 3-9.

5. Regarding signalization of any State Highway System ramp intersection, it is Caltrans policy to analyze all potential intersection improvement solutions. An Intersection Control Evaluation (ICE) report is required for any proposed intersection improvement, in accordance with Traffic Operations Policy Directive No. 13-02, dated: August 30, 2013. The TOPD #13-02 can be found at (Traffic Operations Policy Directive (TOPD) 13-02, Intersection Control Evaluation (ICE).

6. Please note that any new project that may require employing full control at state highway intersections (i.e. to control all approaching traffic via use of signal, stop or yield control) must consider all three intersection control strategies (stop, roundabout and signal) and the supporting design configurations per the Intersection Control Evaluation (ICE) guidelines. ICE establishes a context and performance-based evaluation process to produce engineering recommendations on intersection traffic control strategies and geometric configurations for location specific needs and conditions. The first step of the ICE process will constitute conceptual approval by Caltrans Traffic Operations Office. The project opening day mitigation at an intersection must be evaluated per the ICE procedure. This new policy will affect the engineering process to determine the intersection improvement on State Route (SR) 198. The ICE requirements can be found on the Caltrans website: https://dot.ca.gov/programs/traffic-operations/ice (ICE Process

Information Guide (PDF).

7. As a point of information, any work completed in the State's right-of-way will require a Caltrans encroachment permit. An encroachment permit must be obtained for all proposed activities for placement of encroachments within, under or over the State highway rights-of-way. Activity and work planned in the State right-of-way shall be performed to State standards and specifications, at no cost to the State. Engineering plans, calculations, specifications, and reports (documents) shall be stamped and signed by a licensed Engineer or Architect. Engineering documents for encroachment permit activity and work in the State right-of-way may be submitted using English Units. The Permit Department and the Environmental Planning Branch will review and approve the activity and work in the State right-of-way before an encroachment permit is issued. The Streets and Highways Code Section 670 provides Caltrans discretionary approval authority for projects that encroach on the State Highway System. Encroachment permits will be issued in accordance with Streets and Highway Codes, Section 671.5, "Time Limitations." Encroachment permits do not run with the land. A change of ownership requires a new permit application. Only the legal property owner or his/her authorized agent can pursue obtaining an encroachment permit.

8. Prior to an encroachment permit application submittal, the project proponent is required to schedule a "Pre-Submittal" meeting with District 6 Encroachment Permit Office. To schedule this meeting, please call the Caltrans Encroachment Permit Office - District 6: 1352 W. Olive, Fresno, CA 93778, **at (559) 383-5047 or (559) 383-5235.**

9. **Please review the permit application - required document checklist at:** https://forms.dot.ca.gov/v2Forms/servlet/FormRenderer?frmid=TR0402&distpath=MAOTO&brapath=PERM.

10. **Please also review the permit application - processing checklist at:** https://dot.ca.gov/programs/traffic-operations/ep, **and the** Applicant's Check List to determine appropriate review process (form TR-0416) (Rev 01/23) **at:** https://forms.dot.ca.gov/v2Forms/servlet/FormRenderer?frmid=DOTTR0416

If you have any other questions, please call me at (559) 981-1041.

Sincerely,

David Deel

Mr. David Deel, Acting Branch Chief, Transportation Planning – South

California Department of Transportation

DISTRICT 6 OFFICE
1352 WEST OLIVE AVENUE |P.O. BOX 12616 |FRESNO, CA 93778-2616
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June 13, 2024

TUL-198-5.927
SPR #23131
ELLIOT SUBDIVISION
TRAFFIC IMPACT STUDY (REVISED APRIL 2024)
GTS: 02833

SENT VIA EMAIL

Mr. Cristobal Carrillo, Associate Planner
City of Visalia, Planning and
Community Preservation Dept. - Planning Division
315 East Acequia Avenue
Visalia, CA 93291

Dear Mr. Carrillo:

Thank you for the opportunity to review the Traffic Impact Study (TIS) revised April 2024 proposing to divide 59.13 acres into 224 residential units (Project). The Project is located on the south side of Tulare Avenue, between Road 92 and Roeben Street, approximately ½ mile from the State Route (SR) 198/Road 92 interchange, in the City of Visalia.

Caltrans provides the following comments consistent with the State's smart mobility goals that support a vibrant economy and sustainable communities:

1. In Table 5a (Analysis of PM Queue Length) and Table 5b (Analysis of AM Queue Length), it's observed that the WBL movement shows identical volume and queue values during both AM and PM peak hours. Please verify the volumes for each scenario and make any necessary revisions to the tables accordingly.

2. On page 24, second sentence in 2nd paragraph, the TIS states, "In all cases future 2028 background traffic exceed the storage length prior to the addition of project traffic." Based on Tables 5a and 5b, this statement appears incorrect. The tables appear to indicate for year 2028, there is sufficient storage length for the background traffic prior to the addition of Project traffic. Please verify and correct as needed. Please resubmit the updated TIS to Caltrans for review.

3. Caltrans has processed the Safety Crash Data Request received from the Project consultant. The consultant should now use the provided crash data to complete the safety review, as mentioned in our previous letter, dated March 22, 2024. The safety review should identify and analyze any potential safety impacts due to the increased conflicts. The safety review should include, but is not limited to, the following: conflict avoidance (weaving, existing maneuvers), correlation between collisions and design

standards such as widths and alignment, separation of vulnerable road users from vehicle traffic, and prevention of wrong-way driving. The safety review should be included within the TIS. Please submit the updated TIS for Caltrans review.

4. Alternative transportation policies should be applied to the development. An assessment of multi-modal facilities should be conducted to develop an integrated multi-modal transportation system to serve and help alleviate traffic congestion caused by the project and related development in this area of the City. The assessment should include the following:

   a. Pedestrian walkways should link this proposal to an internal project area walkway, transit facilities, as well as other walkways in the surrounding area.

   b. The Project might also consider coordinating connections to local and regional bicycle pathways to further encourage the use of bicycles for commuter and recreational purposes.

   c. If transit is not available within ¼-mile of the site, transit should be extended to provide services to what will be a high activity center.

5. Caltrans recommends the Project implement "smart growth" principles regarding parking solutions, providing alternative transportation choices to residents and employees. Alternative transportation choices may include but are not limited to parking for carpools/vanpools, car-share and/or ride-share programs. Active Transportation Plans and Smart Growth efforts support the state's 2050 Climate goals.

6. Caltrans supports reducing Vehicle Miles Traveled (VMT) and Green House Gas (GHG) emissions in ways that increase the likelihood people will use and benefit from a multimodal transportation network. Based on Caltrans VMT-Focused Transportation Impact Study Guide, dated May 20, 2020, and effective as of July 1, 2020, Caltrans seeks to reduce single occupancy vehicle trips, provide a safe transportation system, reduce per capita Vehicle Miles Traveled (VMT), increase accessibility to destinations via cycling, walking, carpooling, transit and reduce greenhouse gas (GHG) emissions. Caltrans recommends that the project proponent continue to work with the City or County to further implement improvements to reduce vehicles miles traveled and offer a variety of transportation modes for its employees.

If you have any other questions, please call me at (559) 981-1041.

Sincerely,

David Deel

Mr. David Deel, Acting Branch Chief, Transportation Planning – South

California Department of Transportation

DISTRICT 6 OFFICE
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March 22, 2024

TUL-198-5.927
SPR #23131
ELLIOT SUBDIVISION
TRAFFIC IMPACT STUDY
GTS: 02833

SENT VIA EMAIL

Ms. Susan Currier – Senior Administrative Assistant
City of Visalia
315 East Acequia Avenue
Visalia, CA 93291

Dear Ms. Currier:

Thank you for the opportunity to review the Traffic Impact Study (TIS) proposing to divide 59.13 acres into 224 residential units (Project). The Project is located on the south side of Tulare Avenue, between Road 92 and Roeben Street, approximately 0.5 miles from State Route (SR) 198 on and off-ramps at Road 92, in the City of Visalia.

Caltrans provides the following comments consistent with the State's smart mobility goals that support a vibrant economy and sustainable communities:

1. Caltrans requests the Project to provide queuing analysis for the westbound left-turn movement at the westbound SR 198 off-ramp for Table 5a – PM Queue Length Analysis.

2. According to the Caltrans Local Development Review Safety Practitioner's Guidance, a safety review is required because the Project will be adding trips to the State Highway System. The safety review should identify and analyze any potential safety impacts due to the increased conflicts.

For questions, please contact Scott Lau, Associate Transportation Planner, at (559) 981-7341 or scott.lau@dot.ca.gov.

Sincerely,

BRADEN DURAN, Acting Branch Chief
Transportation Planning – South

PUBLIC COMMENT LETTERS

Shirk Road is a two lane road with telephone poles on the east side of the road and very large oak trees on both sides of the road (from Walnut Avenue to Highway 198). There is already so much traffic up and down this road and it is getting dangerous. A large home subdivision here will even make this problem worse. Roeben would also be congested with Central Valley Christian Schools being already around the corner (buses, parents, students, and staff) and the retirement subdivision.

Wildlife coming from across Shirk (east to fields that are supposed to be where new home division is going in) will suffer dramatically and possibly make them extinct in this area. It is very common for us to see a Grey Fox and cubs at dawn, dusk, and night. They walk on the fence line and come into my yard. They are part of this environment and ecosystem.

Also, many Great Horned and Barn Owls come out and are visible at dusk and night. Peacocks are also in this area, as well as Red Tailed Hawks that perch up in the oak trees in the proposed open field. We routinely see opossums (possums) in the open property during dusk and night. I've also seen skunks wandering in the open field where the subdivision is supposed to be going in.

What happens to this wildlife now? Who is going to lobby for them? They were here way before us. We would hope that you take into consideration their natural habitat, which is where this supposed subdivision is proposed.

Sincerely,

Jim & Carmen Martinez
1548 South Shirk Road
Visalia, CA 93277

Annexation

A
andradefamily93291 <andradefamily93291@gmail.com>
To Planning

Reply | Reply All | Forward | ...

Tue 07/16/2024 5:08 PM

This sender andradefamily93291@gmail.com is from outside your organization.

Some people who received this message don't often get email from andradefamily93291@gmail.com. Learn why this is important

To whom it may concern,
I'm writing to express my strong opposition regarding the proposed new housing development near my home on Shirk Rd.
The increased housing would severely increase the traffic through Shirk. Shirk Rd is already congested with traffic day and night The rural two lane road poses a severe safety concern with an increase of traffic from the proposed project. As indicated in the notification I received, the new subdivision contains a park posing a concer due to the severe increase of the homeless population to frequent such parks during non buisness hours. For example the frontage road of 198 between Roben and shirk as well as plaza park have had an increase in homeless encampments. Over the past several years we have interacted with multiple homeless living or setting up camp on private property along Shirk Rd. With limited options from State and city ordinances or laws, the potential for illegal camping and criminal activity seems likely an outcome of a new subdivision.
Shirk Rd. Being the outter most Western road of visalia, is a thoroughfare between numerous acres of wildlife habitat (fox, coyotes, skunks, opossums and varies birds of prey). The increased traffic and new construction would severely impact their habitat.
In regards to the annexation of the indicated properties, our information indicates the majority of the property owners being affected are not in favor of the properties being annexed. We are currently satisfied with the current County supports provided, nor do we desire to be impacted financially with the cost associated with an annexation.
We thank you for the opportunity to express our concerns and look forward to a just decision.
Joe and Juanita Andrade

Visalia City Planning Commission- Comments on Annexation 2024-1

JS John Schouten <jschoute@wwsires.com>
To Planning

Reply | Reply All | Forward | ...

Wed 07/17/2024 1:21 PM

This sender jschoute@wwsires.com is from outside your organization.
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This email is input to the Visalia City Planning Commission in regard to Annexation No 2024-01.

We live in Savannah Heights which is the subdivision to the south of the proposed annexation property.
We would like to have a better understanding of the following:

1- Has a review been done regarding impact of significantly more automobiles using Shirk and Roeben? Shirk Avenue is already a heavily trafficked area. It would seem to us that the road infrastructure needs to be in place before a new housing project is started in this area. What will the city do to improve the roads in this area?

2- We have health issues. As such, we hope that some controls on dust will be considered. Our home backs up to the wall that is the south end of the proposed project. This is a big concern as there is already a lot of dirt and dust that blows from these fields into the Savannah Heights neighborhood.

3- As mentioned, our home located in Savannah Heights is the south border of the proposed project. We built our home in 1999 and are the original owners. We believe that our property line extends 5 feet to the north beyond the wall that is at the south end of the project. The block retaining wall was built 5 feet south from our property line to allow for agriculture use and tractor turnaround area. We like to have clarity on the border of the proposed project.

Thank you for considering our comments and requests.
Sincerely,
John and Denise Schouten
1617 S. Jacques Ct.
Visalia, CA 93277
jschoute@wwsires.com
559-280-1269

City of Visalia

315 E. Acequia Ave., Visalia, CA 93291

Site Plan Review

September 13, 2023

Site Plan Review No. 2023-131:

Pursuant to Zoning Ordinance Chapter 17.28 the Site Plan Review process has found that your application complies with the general plan, municipal code, policies, and improvement standards of the city. A copy of each Departments/Divisions comments that were discussed with you at the Site Plan Review meeting are attached to this document.

Based upon Zoning Ordinance Section 17.28.070, this is your Site Plan Review determination. However, your project requires discretionary action as stated on the attached Site Plan Review comments. You may now proceed with filing discretionary applications to the Planning Division.

This is your Site Plan Review Permit; your Site Plan Review became effective **August 16, 2023**. A site plan review permit shall lapse and become null and void one year following the date of approval unless, prior to the expiration of one year, a building permit is issued by the building official, and construction is commenced and diligently pursued toward completion.

If you have any questions regarding this action, please call the Community Development Department at (559) 713-4359.

Respectfully,

Paul Bernal
Community Development Director
315 E. Acequia Ave.
Visalia, CA 93291

Attachment(s):

- Site Plan Review Comments

City of Visalia — Planning Division

315 E. Acequia Ave., Visalia, CA 93291

Tel: (559) 713-4359; Fax: (559) 713-4814

MEETING DATE	August 16, 2023
SITE PLAN NO.	2023-131
PARCEL MAP NO.	
SUBDIVISION	
LOT LINE ADJUSTMENT NO.	

Enclosed for your review are the comments and decisions of the Site Plan Review committee. Please review all comments since they may impact your project.

☐ **RESUBMIT** Major changes to your plans are required. Prior to accepting construction drawings for building permit, your project must return to the Site Plan Review Committee for review of the revised plans.

☐ During site plan design/policy concerns were identified, schedule a meeting with

☐ Planning ☐ Engineering prior to resubmittal plans for Site Plan Review.

☐ Solid Waste ☐ Parks and Recreation ☐ Fire Dept.

☒ **REVISE AND PROCEED** (see below)

☐ A revised plan addressing the Committee comments and revisions must be submitted for Off-Agenda Review and approval prior to submitting for building permits or discretionary actions.

☐ Submit plans for a building permit between the hours of 9:00 a.m. and 4:00 p.m., Monday through Friday.

☒ Your plans must be reviewed by:

☐ CITY COUNCIL ☐ REDEVELOPMENT

☒ PLANNING COMMISSION ☐ PARK/RECREATION

☒ ANX, TSM

☐ HISTORIC PRESERVATION ☐ OTHER

☒ **ADDITIONAL COMMNTS:**

If you have any questions or comments, please call the Site Plan Review Hotline at (559) 713-4440
Site Plan Review Committee

SITE PLAN REVIEW COMMENTS

Cristobal Carrillo, Planning Division (559) 713-4443
Date: August 16, 2023

SITE PLAN NO:	2023-131
PROJECT:	Elliot Subdivision
DESCRIPTION:	SITE PLAN NO. 2023-077
APPLICANT:	JONATHAN FRAUSTO
PROP. OWNER:	MARGARET KENYON ELLIOTT
LOCATION TITLE:	1537 S. ROEBEN STREET
APN TITLE:	087-010-006, 008
GENERAL PLAN	Residential Low Density
ZONING:	Tulare County Jurisdiction (AE-20)

Planning Division Recommendation:

☒ Revise and Proceed
☐ Resubmit

Reference Site Plan Review No. 2023-077.

Project Requirements

- Annexation
- Tentative Subdivision Map
- CEQA Initial Study and environmental determination
- Tribal Consultation under AB 52
- Cultural/ Ag. / and Bio Studies will be required

PROJECT SPECIFIC INFORMATION: August 16, 2023

1. The proposal to develop a residential subdivision will require the applicant to file for the following:
   a. Annexation of the project site into the Visalia City Limits;
   b. Tentative Subdivision Map, including the following:
      i. Phasing Plan and operational statement.
2. The proposal will require CEQA Initial Study and environmental determination:
   a. Tribal consultation as required by AB 52 shall be conducted for the project.
   b. Records search with the Native American Heritage Commission and CHRIS survey required.
   c. Submittal of the following studies shall be required:
      i. Cultural Resource;
      ii. Agricultural (the project is subject to the Agricultural Preservation Ordinance);
      iii. Biological;
      iv. Oak Tree Evaluation;
      v. Traffic Impact Analysis, including a Vehicle Miles Traveled analysis.
3. The applicant shall provide building footprints for all residences located on parcels with atypical lot dimensions.
4. The applicant shall consult with the Consolidated Peoples Ditch Co. regarding the South Fork Persian Ditch location and to obtain any information on required setbacks as well as any other improvements that may have to be incorporated as part of the subdivision.
5. The applicant shall consult with the City of Visalia Parks and Recreation Department regarding the proposed park.
6. The applicant shall consult with the City of Visalia Urban Forestry Division regarding the Valley Oak trees located onsite.
7. The project shall comply with the Tulare County Airport Land Use Plan.
8. A sewer analysis shall be provided.
9. A City of Visalia CEQA indemnity agreement shall be required to be submitted with the project.

10. Cross sections for all local, collector, arterial streets and ditches shall be provided.
11. The applicant shall flesh out details for the temporary ponding basin, including how solid waste and emergency vehicles will circulate though that portion of the project site while the temporary ponding basin is in place.
12. Staff will recommend a condition of approval requiring the temporary ponding basin to remain in place until the regional ponding basin is established.
13. Provide a detail showing what the lots within the temporary ponding basin will look like, including dimensions and size, once the basin is removed.
14. Caltrans comments shall be provided and incorporated into the project prior to the scheduling of a public hearing before the Visalia Planning Commission.
15. The site plan shall depict the location of all existing and proposed fencing, including material and height.
16. Provide a color version of the map highlighting the park and any other open space areas to be provided within the subdivision. The map shall also depict amenities to be provided in the park.

PROJECT SPECIFIC INFORMATION: June 28, 2023 (SPR No. 2023-077)

1. There is concern for the proposed remainders and their use.
2. Consult with the Parks Department regarding the proposed park, its location, and size.
3. The TSM exhibit shall include parceling on the temporary basin area.
4. The submittal is still subject to the requirements of the Agricultural Preservation Ordinance (APO).
5. Address all other comments from engineering and traffic, specifically.
6. All previous comments are still required.

PROJECT SPECIFIC INFORMATION: May 17, 2023 (SPR No. 2023-077)

1. The proposal to develop a residential subdivision will require the applicant to file for the following:
   a. Annexation of the project site into the Visalia City Limits;
   b. Tentative Subdivision Map, including the following:
      i. Phasing Plan and operational statement.
2. The proposal will require CEQA Initial Study and environmental determination:
   a. Tribal consultation as required by AB 52 shall be conducted for the project.
   b. Records search with the Native American Heritage Commission and CHRIS survey required.
   c. Submittal of the following studies shall be required:
      i. Cultural Resource
      ii. Agricultural
      iii. Biological
      iv. Oak Tree Evaluation
3. The applicant shall provide building footprints for all residences located on parcels with atypical lot dimensions.
4. The applicant shall consult with the Consolidated Peoples Ditch Co. regarding the South Fork Persian Ditch location and to obtain any information on required setbacks as well as any other improvements that may have to be incorporated as part of the subdivision.
5. Provide an expanded view on the site plan with additional detail of the ditch, and homes or improvements abutting the ditch.
6. Staff would recommend the applicant reorient the proposed larger lots to the southern end of the map, nearest existing larger lots in the Savannah Heights Unit 3.
7. The applicant shall work with CIP engineering to flush out details on the basin and nearby future regional basin, and with the parks director regarding open space/ park area.
8. Meet all other Codes and Ordinances.

Note:

1. **The applicant shall contact the San Joaquin Valley Air Pollution Control District to verify whether additional permits are required through the District.**

2. **Prior to a final for the project, a signed Certificate of Compliance for the MWELO standards is required indicating that the landscaping has been installed to MWELO standards.**

Sections of the Municipal Code to review:

Title 16 Subdivisions

17.12 Single-Family Residential Zone

17.12.135 Lot area less than 5,000 square feet.

17.32.080 Maintenance of landscaped areas.

17.34 Off-street parking and loading facilities.

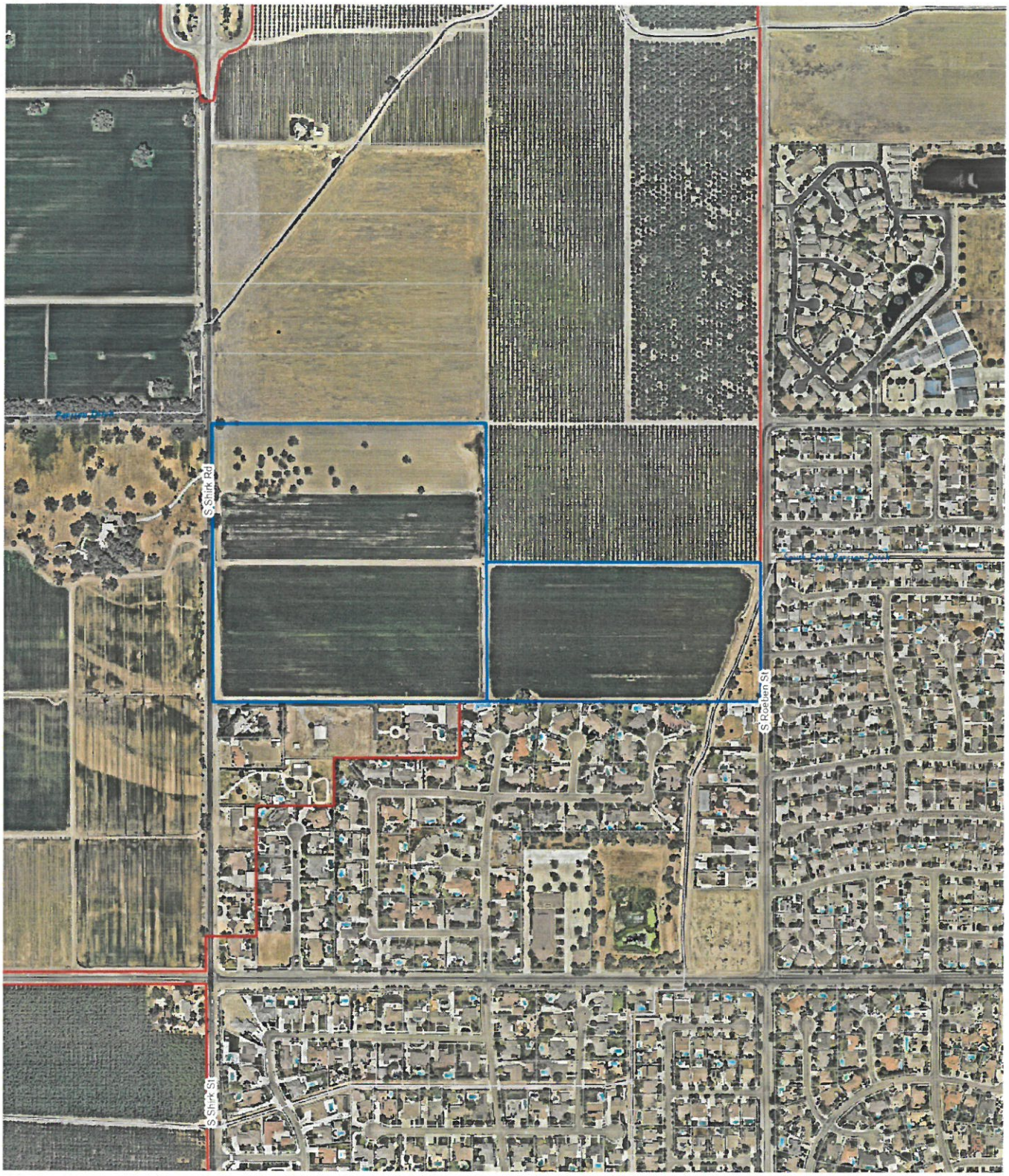
17.34.020(A)(1) Single-family dwelling

17.36 Fences Walls and Hedges

17.36.030 Single-family residential zones

NOTE: Staff recommendations contained in this document are not to be considered support for a particular action or project unless otherwise stated in the comments. The comments found on this document pertain to the site plan submitted for review on the above referenced date. Any changes made to the plan submitted must be submitted for additional review.

Signature: _____


S Shirk Rd
S Roeben St
S Shirk St

SUBDIVISION & PARCEL MAP REQUIREMENTS
ENGINEERING DIVISION

☐	**Luqman Ragabi**	**713-4362**
☐	**Edelma Gonzalez**	**713-4364**
☒	**Keyshawn Ford**	**713-4268**

ITEM NO: 3 DATE: AUGUST 16th, 2023

SITE PLAN NO.:	**23-131**
PROJECT TITLE:	**ELLIOT SUBDIVISION**
DESCRIPTION:	**A TENTATIVE SUBDIVISION FOR 224 LOTS**
APPLICANT:	**JONATHAN FRAUSTO**
PROP. OWNER:	**ELLIOTT MARGARET KENYON**
LOCATION:	**1537 S ROEBEN ST**
APN:	**087-010-006 & 087-010-008**

SITE PLAN REVIEW COMMENTS

☒REQUIREMENTS (Indicated by checked boxes)

☒Submit improvements plans detailing all proposed work; ☒Subdivision Agreement will detail fees & bonding requirements

☒Bonds, certificate of insurance, cash payment of fees/inspection, and approved map & plan required prior to approval of Final Map.

☒The Final Map & Improvements shall conform to the Subdivision Map Act, the City's Subdivision Ordinance and Standard Improvements.

☒A preconstruction conference is required prior to the start of any construction.

☒Right-of-way dedication required. A title report is required for verification of ownership. ☒by map ☐by deed

☒City Encroachment Permit Required which shall include an approved traffic control plan.

☐CalTrans Encroachment Permit Required. ☐CalTrans comments required prior to tentative parcel map approval. CalTrans contacts: David Deel (Planning) 488-4088

☒Landscape & Lighting District/Home Owners Association required prior to approval of Final Map. Landscape & Lighting District will maintain common area landscaping, street lights, street trees and local streets as applicable. Submit completed Landscape and Lighting District application and filing fee a min. of 75 days before approval of Final Map. ***LLD TO BE FORMED***

☒Landscape & irrigation improvement plans to be submitted for each phase. Landscape plans will need to comply with the City's street tree ordinance. The locations of street trees near intersections will need to comply with Plate SD-1 of the City improvement standards. A street tree and landscape master plan for all phases of the subdivision will need to be submitted with the initial phase to assist City staff in the formation of the landscape and lighting assessment district.

☒Dedicate landscape lots to the City that are to be maintained by the Landscape & Lighting District.

☐Northeast Specific Plan Area: Application for annexation into Northeast District required 75 days prior to Final Map approval.

☒Written comments required from ditch company. ***PERSIAN*** Contacts: James Silva 747-1177 for Modoc, Persian, Watson, Oakes, Flemming, Evans Ditch and Peoples Ditches; Paul Hendrix 686-3425 for Tulare Irrigation Canal, Packwood and Cameron Creeks; Bruce George 747-5601 for Mill Creek and St. John's River.

☒Final Map & Improvements shall conform to the City's Waterways Policy. ☒Access required on ditch bank, 12' minimum. ☐Provide wide riparian dedication from top of bank. ***SEE ADDITIONAL COMMENTS***

☒Sanitary Sewer master plan for the entire development shall be submitted for approval prior to approval of any portion of the system. The sewer system will need to be extended to the boundaries of the development where future connection and extension is anticipated. The sewer system will need to be sized to serve any future developments that are anticipated to connect to the system. ***EXTEND EXISTING SS ACROSS ALL STREET FRONTAGES. SUBJECT TO CHANGE PER ONGOING MASTER PLAN UPDATES. SEE ADDL COMMENTS.***

☒Grading & Drainage plan required. If the project is phased, then a master plan is required for the entire project area that shall include pipe network sizing and grades and street grades. ☒ Prepared by registered civil engineer or project architect. ☒ All elevations shall be based on the City's benchmark network. Storm run-off from the project shall be handled as follows: a) ☒ directed to the City's existing storm drainage system; b) ☐ directed to a permanent on-site basin; or c) ☒ directed to a temporary on-site basin is required until a

connection with adequate capacity is available to the City's storm drainage system. On-site basin: : maximum side slopes, perimeter fencing required, provide access ramp to bottom for maintenance. ***EXTEND EXISTING SD MAINS ACCORDINGLY, SUBJECT TO CHANGE PER ONGOING MASTER PLAN UPDATES. SEE ADDITIONAL COMMENTS.***

☒Show Valley Oak trees with drip lines and adjacent grade elevations. ☒ Protect Valley Oak trees during construction in accordance with City requirements. ☒A permit is required to remove Valley Oak trees. Contact Public Works Admin at (559)713-4428 for a Valley Oak tree evaluation or permit to remove. ☒ Valley Oak tree evaluations by a certified arborist are required to be submitted to the City in conjunction with the tentative map application. ☒ A pre-construction conference is required.

☒Show adjacent property grade elevations on improvement plans. A retaining wall will be required for grade differences greater than 0.5 feet at the property line.

☒Relocate existing utility poles and/or facilities. ***AS NECESSARY PER LAYOUT. REQUIRED ON SHIRK ST***

☒Underground all existing overhead utilities within the project limits. Existing overhead electrical lines over 50kV shall be exempt from undergrounding. ***REQUIRED ONSITE, ROEBEN ST.***

☒Provide "R" value tests: ***1*** each at ***300' INTERVALS AT CENTER LINE, REFER TO CITY PAVEMENT STANDARDS.***

☒Traffic indexes per city standards: ***REFER TO CITY PAVEMENT STDS***

☒All public streets within the project limits and across the project frontage shall be improved to their full width, subject to available right of way, in accordance with City policies, standards and specifications. ***ROEBEN, TULARE, AND SHIRK ST.***

☒All lots shall have separate drive approaches constructed to City Standards.

☒Install street striping as required by the City Engineer. ***REFER TO TRAFFIC SAFETY DEPT.***

☒Install sidewalk: ***6-7*** ft. wide, with ***5*** ft. wide parkway on ***SHIRK & ROEBEN.***

☒Cluster mailbox supports required at 1 per 2 lots, or use postal unit (contact the Postmaster at 732-8073).

☒Subject to existing Reimbursement Agreement to reimburse prior developer:

☒Abandon existing wells per City of Visalia Code. A building permit is required.

☒Remove existing irrigation lines & dispose off-site. ☒Remove existing leach fields and septic tanks.

☒ Fugitive dust will be controlled in accordance with the applicable rules of San Joaquin Valley Air District's Regulation VIII. Copies of any required permits will be provided to the City.

☒ If the project requires discretionary approval from the City, it may be subject to the San Joaquin Valley Air District's Rule 9510 Indirect Source Review per the rule's applicability criteria. A copy of the approved AIA application will be provided to the City.

☒If the project meets the one acre of disturbance criteria of the State's Storm Water Program, then coverage under General Permit Order 2009-0009-DWQ is required and a Storm Water Pollution Prevention Plan (SWPPP) is needed. A copy of the approved permit and the SWPPP will be provided to the City.

☒Comply with prior comments ☐Resubmit with additional information ☒Redesign required

Additional Comments:

1. ***Development will be subject to impact fees due at time of final map and building permit issuance.***

2. ***Project is outside of City limits. Coordinate with Planning Dept. for requirements and procedures for annexation.***

3. ***Site plan to show out-lot width and to indicate location of block wall. A 2-foot block wall footing easement will be required along all lots adjacent to the block walls.***

4. ***Site plan to provide cross-section of arterial and collector roads and shall show proposed frontage improvements. In addition, show what the intersection design looks like at Shirk and Roeben St.***

5. ***Written comments required from ditch company for Persian Ditch. Ditch dedication area shall be at least 25' minimum from centerline of ditch, except that you must maintain a minimum 15' wide access and maintenance road along ditch channel. Coordinate with utility company for existing power poles along this area.***

6. *Drive approach improvements for access to the ditch embankments are required, typical width is 18-foot per City Stds. Applicant to further coordinate requirements for maintenance access road with ditch company for City staff review. Required improvements along the culvert street frontage to include culvert crossing, headwall relocation, sidewalk, access drive approaches for maintenance, fencing, and gates. Provide detail of improvements with site plan resubmittal.*

7. *Site plan to evaluate and coordinate all oak trees identified onsite with City arborist. Indicate those to be removed. All improvements in and around crown drip lines to comply with adopted City improvement stds around Valley Oaks.*

8. *Refer to Building Dept. conditions for FEMA regulations regarding parcels located in the high-risk flood plain.*

9. *Site plan does not identify phasing of desired improvements. Provide phasing exhibit for further review and consideration by City staff. Tentative map submittal to indicate phase level of improvements.*

10. *The exterior public roadways shall be improved per City arterial and collector street standards. Improvements to include, but may not be limited to, pavement, sidewalk, curb & gutter, utility relocations, SD & SS infrastructure, curb ramps, street lighting, striping and signage, road transitions, and culvert crossings.*

11. *Install 30' radius curb ramp returns at local street connections to Roeben, and Shirk. Install 20' radius curb ramp returns at connections of two local streets. Call out radius on site plan.*

12. *Public street lighting to be installed per City Standards. An electrical plan with voltage drop calcs shall be submitted with civil plans. City will own and maintain the street lighting therefore a service pedestal will need to be installed.*

13. *Public street cul-de-sac design to comply with City standards.*

14. *Public street striping to be determined at time of civil plan review.*

15. *The ongoing Sanitary Sewer master plan update is indicating a 48" SS trunk line in Shirk across project frontage going south to Walnut Ave. There is an existing 6" SS Force main along project frontage and a lift station north of project site. Applicant shall show that there is sufficient capacity for the project to tie-into the City's sewer system, otherwise, installation of the 48" SS trunk line would be required.*

16. *Existing power poles along Shirk will need to be relocated as part of project road improvement requirements. Shirk is identified in the City's Circulation Element and Transportation Impact Fee progam as a funded arterial therefore specific improvement costs (travel lanes) qualify for reimbursement in the form of impact fee credits. Further coordination with City Engineer is required.*

17. *The project area is currently under the City's Storm Drain master plan update and further coordination with City Engineer will be required as part of subdivision development. The master plan update has identified a 60" SD RCP on Shirk all the way south to a Future Storage Regional Basin located at the northwest corner of Shirk and Walnut.*

18. *Subdivision will be required to provide a temporary retention basin onsite in the interim, including a SD stub on Shirk for Master Plan SD main connection/tie-in. The temp basin shall be designed with proper infrastructure to abandon once regional basin is excavated. Tentative map shall indicate desired temp basin area with tentative map layout. Basin site will require an easement to the City for storm water retention, and is developer's responsibility to maintain, backfill and abandon in the future, when regional basin is constructed. Applicant must also show that there is adequate space for turnaround along Street 1 and Avenue 8 near the basin.*

19. ***Roeben St. is required to be widened per City 84' collector P-3 standards. Restriping will be required south of the project to eliminate existing temporary striping layout and include bike lanes. Median improvements do not exist south of project therefore median may be deferred - to be further determined depending outcome of Tulare and Roeben intersection alignment. Roeben is an existing half collector street therefore widening improvement costs, specifically the travel lanes, can be reimbursable in the form of fee credits. Further coordinate with City Engineer.***

20. ***Per the on-going SD Master Plan, Further coordinate with City Engineer for SD requirements along Roeben.***

21. ***A building permit is required, standard plan check and inspection fees apply.***

SUMMARY OF APPLICABLE DEVELOPMENT IMPACT FEES

Site Plan No: **23-131**
Date: **08/16/2023**

Summary of applicable Development Impact Fees to be collected at the time of final/parcel map recordation:

(Preliminary estimate only! Final fees will be based on approved subdivision map & improvements plans and the fee schedule in effect at the time of recordation.)

(Fee Schedule Date:**07/01/2023**)
(Project type for fee rates:**Tentative Subdivision Map**)

☐ Existing uses may qualify for credits on Development Impact Fees.

FEE ITEM	FEE RATE
☒ Trunk Line Capacity Fee	**$952/UNIT**
☒ Sewer Front Foot Fee	**$52/LF**
☒ Storm Drainage Acquisition Fee	**$3,780/AC**
☒ Park Acquisition Fee	**$1,872/UNIT**
☐ Northeast Acquisition Fee Total Storm Drainage Block Walls Parkway Landscaping Bike Paths	
☒ Waterways Acquisition Fee	**$3,086/AC**

Additional Development Impact Fees will be collected at the time of issuance of building permits.

City Reimbursement:

1.) No reimbursement shall be made except as provided in a written reimbursement agreement between the City and the developer entered into prior to commencement of construction of the subject planned facilities.
2.) Reimbursement is available for the development of arterial/collector streets as shown in the City's Circulation Element and funded in the City's transportation impact fee program. The developer will be reimbursed for construction costs and right of way dedications as outlined in Municipal Code Section 16.44. Reimbursement unit costs will be subject to those unit costs utilized as the basis for the transportation impact fee.
3.) Reimbursement is available for the construction of storm drain trunk lines and sanitary sewer trunk lines shown in the City's Storm Water Master Plan and Sanitary Sewer System Master Plan. The developer will be reimbursed for construction costs associated with the installation of these trunk lines.

Keyshawn Ford
Keyshawn Ford

SPR 23131
ELLIOT SUBDIVISION
15375 ROEBEN

City of Visalia

Building: Site Plan Review Comments

NOTE: These are general comments and DO NOT constitute a complete plan check for your specific project Please refer to the applicable California Code & local ordinance for additional requirements.

- ☐ A building permit will be required. ***For information call (559) 713-4444***
- ☐ Submit 1 digital set of professionally prepared plans and 1 set of calculations. (Small Tenant Improvements)
- ☐ Submit 1 digital set of plans prepared by an architect or engineer. Must comply with 2016 California Building Cod Sec. 2308 for conventional light-frame construction or submit 1 digital set of engineered calculations.
- ☐ Indicate abandoned wells, septic systems and excavations on construction plans.

You are responsible to ensure compliance with the following checked items:

- ☐ Meet State and Federal requirements for accessibility for persons with disabilities.
- ☐ A path of travel, parking and common area must comply with requirements for access for persons with disabilities.
- ☐ All accessible units required to be adaptable for persons with disabilities.
- ☐ Maintain sound transmission control between units minimum of 50 STC.
- ☐ Maintain fire-resistive requirements at property lines.
- ☐ A demolition permit & deposit is required. ***For information call (559) 713-4444***
- ☐ Obtain required permits from San Joaquin Valley Air Pollution Board. ***For information call (661) 392-5500***
- ☐ Plans must be approved by the Tulare County Health Department. ***For information call (559) 624-8011***
- ☒ Project is located in flood zone AE. ☐ Hazardous materials report. MEET FEMA FLOOD REQUIREMENTS.
- ☐ Arrange for an on-site inspection. (Fee for inspection $157.00) ***For information call (559) 713-4444***
- ☐ School Development fees.
- ☐ Park Development fee $_____, per unit collected with building permits.
- ☐ Additional address may be required for each structure located on the site. ***For information call (559) 713-4320***
- ☐ Acceptable as submitted
- ☐ No comments at this time

Additional comments: ALL NEW DWELLINGS SHALL BE PROTECTED WITH TYPE 13D SPRINKLER SYSTEM.

VAL GARCIA 8/15/23

Signature

Site Plan Comments Visalia Fire Department Corbin Reed, Fire Marshal 420 N. Burke Visalia CA 93292 559-713-4272 office prevention.division@visalia.city	Date Item # Site Plan # APN:	August 16, 2023 3 23131 07010006 & 8

- The Site Plan Review comments are issued as **general overview** of your project. With further details, additional requirements will be enforced at the Plan Review stage. Please refer to the 2022 California Fire Code (CFC), 2022 California Building Codes (CBC) and City of Visalia Municipal Codes.

- Construction and demolition sites prior to and during construction shall comply with the attached **Access & Water Guidelines.**

- Residential developments shall be provided with **fire hydrants** every six hundred (600) lineal feet of residential frontage. In isolated developments, no less than two (2) fire hydrants shall be provided. The exact location and number of fire hydrants shall be at the discretion of the fire marshal, fire chief and/or their designee. VMC 16.36.120(5); 2022 CFC §507, App B and C

- **All streets** shall meet the City of Visalia's Design & Improvement Standards for streets to ensure that fire apparatus can make access to all structures in the event of an emergency.

Corbin Reed
Fire Marshal

City of Visalia
420 N. Burke Visalia, California 932912
Fire Department
Telephone (559) 713-4266 Fax: (559) 713-4808

Visalia Fire Department Access and Water Guidelines for Residential Construction

Effective July 1, 2019

Model Homes & Non-Model Homes

Model and Non-Model homes may be constructed once **all** of the following conditions have been met:

1. All portions of proposed residential construction shall be located and accessible within 150 feet of an existing, paved, city street.

2. **Exceptions:** If any portion of a model home or a non-model is located greater than 150 feet from an existing city street, a fire apparatus access road shall be installed and maintained unobstructed at all times. The fire access road, including curb and gutter, shall be installed per City Specifications and City Standard P-1 excluding the Asphalt Concrete layer, but in no circumstance shall have a structural section less than required under City Standard P-25 based on R-Value of existing subgrade unless otherwise specified on approved plans. Compaction tests, including testing of the aggregate base layer, shall be performed under City inspection and reports shall be submitted to the Public Works Inspector prior to City acceptance for the road to be used for fire access. The fire access roads shall be usable and maintained in place until permanent paved access has been provided meeting City standards and specifications.

3. All required fire hydrants shall be installed in the approved locations per the stamped and approved plans and shall be fully operational.

   Exception: If fire hydrant installation has not been completed an onsite elevated water tank shall be provided. The minimum size of provided water tank shall be 10,000 gallons, and shall be designated as "Fire Department use only". Tanks shall be located within 300 feet travel distance of each structure being developed. Tanks shall remain in place until all fire hydrant installation has been completed and all hydrants are fully operational. Travel distance shall be measured by an approved fire apparatus access route.

   Connection provided on water tanks shall be a four and one half inch National Hose thread male fitting and shall be gravity fed, with connection point located between 18 and 36 inches above ground level.

***If at any time the conditions of these guidelines are not being met the Fire Marshal/Fire Chief or his/her designee have the authority to issue a "Stop Work Order" until corrections have been made.**

*** This information is intended to be a guideline. The Fire Marshal and/or Fire Chief shall have the discretion to modify requirements at any time as set forth under CFC Appendix D.**



City of Visalia
Police Department
303 S. Johnson St.
Visalia, CA 93292
(559) 713-4370

Date: 08/16/23
Item: 3
Site Plan: SPR23131
Name: Robert Avalos

Site Plan Review Comments

☑ No Comment at this time.

☐ Request opportunity to comment or make recommendations as to safety issues as plans are developed.

☐ Public Safety Impact Fee:
Ordinance No. 2001-11 Chapter 16.48 of Title 16 of the Visalia Municipal Code
Effective date - August 17, 2001.

☐ Impact fees shall be imposed by the City pursuant to this Ordinance as a condition of or in conjunction with the approval of a development project. "New Development or Development Project" means any new building, structure or improvement of any parcels of land, upon which no like building, structure of improvement previously existed. *Refer to Engineering Site Plan comments for fee estimation.

☐ Not enough information provided. Please provide additional information pertaining to:

☐ Territorial Reinforcement: Define property lines (private/public space).

☐ Access Controlled/ Restricted etc.

☐ lighting Concerns:

☐ Traffic Concerns:

☐ Surveillance Issues:

☐ Line of Sight Issues:

☐ Other Concerns:

SITE PLAN REVIEW COMMENTS

CITY OF VISALIA TRAFFIC SAFETY DIVISION

August 16, 2023

ITEM NO: 3 **Added to Agenda** **MEETING TIME: 09:30**

SITE PLAN NO: SPR23131 ASSIGNED TO: Cristobal Carrillo Cristobal.Carrillo@visalia.city

PROJECT TITLE: Elliot Subdivision

DESCRIPTION: Site Plan No. 2023-077
Proposed low density subdivision with a total of 224 units. The project fronts S Shirk Rd, Roeben St, and Tulare Ave and features a 4 acre park and a temporary retention basin.

APPLICANT: Jonathan Frausto - Applicant

OWNER: ELLIOTT MARGARET KENYON
ELLIOTT MARGARET KENYON

APN: 087010006
087010008

ADDRESS: 1537 S ROEBEN ST

THE TRAFFIC DIVISION WILL PROHIBIT ON-STREET PARKING AS DEEMED NECESSARY

☐ No Comments

☐ See Previous Site Plan Comments

☒ Install Street Light(s) per City Standards at time of development.

☒ Install Street Name Blades at Locations at time of development.

☒ Install Stop Signs at ***local road intersection with collector/arterial*** Locations.

☐ Construct parking per City Standards PK-1 through PK-4 at time of development.

☒ Construct drive approach per City Standards at time of development.

☒ Traffic Impact Analysis required (CUP)

- ☐ Provide more traffic information such as . Depending on development size, characteristics, etc., a TIA may be required.

☐ Additional traffic information required (Non Discretionary)

- ☐ Trip Generation - Provide documentation as to concurrence with General Plan.
- ☐ Site Specific - Evaluate access points and provide documentation of conformance with COV standards. If noncomplying, provide explanation.
- ☐ Traffic Impact Fee (TIF) Program - Identify improvments needed in concurrence with TIF.

Additional Comments:

- Raised intersection design for intersection of Street 9 & Avenue 6, Avenue 1 & Street 3, Avenue 3 & Street 3.
- Traffic calming measures required on Street 6. Roadway is too long and will induce speed.
- Road access off of Shirk will be restricted to right in/out only with future build of center median.
- What is the plan to connect with parcel to the north, and access off Roeben?

- Will the development be phased? Phasing of development?

Leslie Blair

Leslie Blair

CITY OF VISALIA
SOLID WASTE DIVISION
336 N. BEN MADDOX
VISALIA CA. 93291
713 - 4532
COMMERCIAL BIN SERVICE

23131

August 16, 2023

	No comments.
XX	See comments below
XX	Revisions required prior to submitting final plans. See comments below.
	Resubmittal required. See comments below.
XX	Customer responsible for all cardboard and other bulky recyclables to be broken down before disposing of in recycle containers
	ALL refuse enclosures must be R-3 OR R-4
XX	Customer must provide combination or keys for access to locked gates/bins
	Type of refuse service not indicated.
	Location of bin enclosure not acceptable. See comments below.
	Bin enclosure not to city standards double.
	Inadequate number of bins to provide sufficient service. See comments below.
	Drive approach too narrow for refuse trucks access. See comments below.
XX	Area not adequate for allowing refuse truck turning radius of : Commercial 50 ft. outside 36 ft. inside; Residential 35 ft. outside, 20 ft. inside.
XX	Paved areas should be engineered to withstand a 55,000 lb. refuse truck.
XX	Bin enclosure gates are required
XX	Hammerhead turnaround must be built per city standards.
	Cul - de - sac must be built per city standards.
	Bin enclosures are for city refuse containers only. Grease drums or any other items are not allowed to be stored inside bin enclosures.
	Area in front of refuse enclosure must be marked off indicating no parking
	Enclosure will have to be designed and located for a STAB service (DIRECT ACCESS) with no less than 38' clear space in front of the bin, included the front concrete pad.
	Customer will be required to roll container out to curb for service.
	Must be a concrete slab in front of enclosure as per city standards, the width of the enclosure by ten(10) feet, minimum of six(6) inches in depth.
	Roll off compactor's must have a clearance of 3 feet from any wall on both sides and there must be a minimum of 53 feet clearance in front of the compactor to allow the truck enough room to provide service.
XX	City ordinance 8.28.120-130 (effective 07/19/18) requires contractor to contract with City for removal of construction debris unless transported in equipment owned by contractor or unless contracting with a franchise permittee for removal of debris utilizing roll-off boxes.
Comment	Solid waste services to include trash, recycle, and organic collections per the State of California's mandatory recycling laws (AB341 & AB1826). City standard (3-can) residential services to be assigned per address. Customer to identify a temporary turnaround at the south end of Street 1 near the proposed ponding basin, to allow for solid waste vehicles to safely turnaround.

Jason Serpa, Solid Waste Manager, 559-713-4533
Edward Zuniga, Solid Waste Supervisor, 559-713-4338

Nathan Garza, Solid Waste,559-713-4532

City of Visalia
Public Works
7579 Ave. 288, Visalia, CA 93277
(559) 713-4465 Fax (559) 713-4501

SITE PLAN REVIEW DATE: 08/16/2023

WASTEWATER COLLECTIONS AND PRETREATMENT DIVISION (QUALITY ASSURANCE)
SITE PLAN REVIEW COMMENTS

SITE PLAN REVIEW NO: 23131

PROJECT NAME: ELLIOT SUBDIVISON

THE PROJECT IS SUBJECT TO THE FOLLOWING REQUIREMENTS FROM WASTEWATER PRETREATMENT DIVISION (QUALITY ASSURANCE):

- [x] SUBMISSION OF WASTEWATER DISCHARGE PERMIT APPLICATION/QUESTIONAIRRE/OTHER REGULATORY FORMS
  - FORM REQUIRED SEE BELOW
  - FORM REQUIRED _____
  - FORM REQUIRED _____
- [ ] INSTALLATION OF SAND AND GREASE INTERCEPTOR
- [ ] INSTALLATION GREASE INTERCEPTOR
- [ ] OTHER _____
- [ ] SITE PLAN REVIEWED-NO COMMENTS

CONTACT THE WASTEWATER PRETREATMENT DIVISION (QUALITY ASSURANCE) AT (559) 713-4529 OR JESSICA.SANDOVAL@VISALIA.CITY, IF YOU HAVE ANY QUESTIONS.

COMMENTS:

Provide an estimate of wastewater flow/bod/tss using Wastewater Engineering (3rd Edition)by Metcalf & Eddy. Provide an estimated timeline of project start/completion, and rate of development (e.g 4 houses per month, starting in 2025, ending in 2032)

DATE REVIEWED: 08/15/2023

CALIFORNIA WATER SERVICE

Visalia District 216 North Valley Oaks Drive
Visalia, CA 93292 *Tel:* (559) 624-1600

Site Plan Review Comments From: California Water Service Scott McNamara, Superintendent 216 N Valley Oaks Dr. Visalia, CA 93292 559-624-1622 Office 559-735-3189 Fax smcnamara@calwater.com	Date: 08/16/2023 Item # 3 Site Plan # 23-131 (23-077) Project: Elliott Subdivision Description: Applicant: Location: APN: 087-010-008

The following comments are applicable when checked:

☐ Re-submit
☐ No Comments at this time

☒ **Fire Hydrants**
Comments- Per Visalia Fire Department requirements. If street frontage hydrants are required off existing water main, Cal Water will utilize our own contractor for that work and that work will be paid for by the developer/customer. The location of those hydrants is to be approved by Visalia Fire.

☒ **Services**
Comments- Service(s) will be needed for this development.

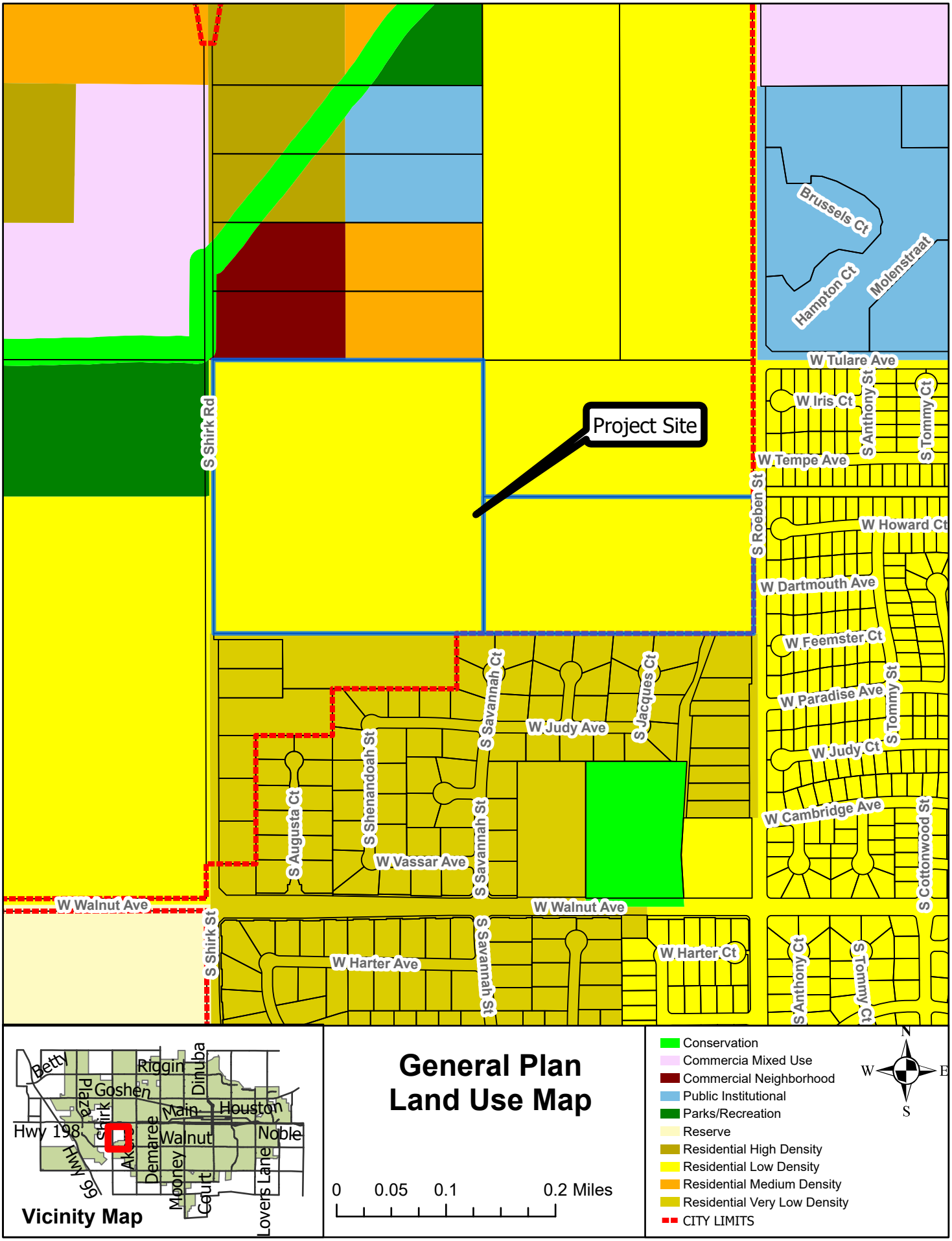
☒ **Mains**
Comments- Existing water main on Roeben. Will need water main installed on Tulare, west of Roeben to Shirk, and brought from the north property line on Shirk to the south property line on Shirk and installed within the proposed development.

☒ **Backflow Requirements**
Comments- Will be required if any parcel is for multi-family, commercial, or has multiple services on one parcel. Please contact Cross Connection Control Specialist, Juan Cisneros at 559-624-1670 or visaliabackfow@calwater.com for a backflow install packet.

Additional Comments:

☒ Please contact New Business Superintendent Sedelia Sanchez at 559-624-1621 or ssanchez@calwater.com to start your project with Cal Water.

- **Cal Water may work with the developer of this subdivision to purchase a piece of property for a tank/well site.**


Project Site
Brussels Ct
Hampton Ct
Molenstraat
W Tulare Ave
W Iris Ct
S Anthony St
S Tommy Ct
S Shirk Rd
W Tempe Ave
S Roeben St
W Howard Ct
W Dartmouth Ave
W Feemster Ct
S Savannah Ct
S Jacques Ct
W Paradise Ave
S Tommy St
W Judy Ave
W Judy Ct
S Shenandoah St
S Augusta Ct
W Cambridge Ave
S Cottonwood St
W Vassar Ave
S Savannah St
W Walnut Ave
W Walnut Ave
S Shirk St
W Harter Ave
S Savannah St
W Harter Ct
S Anthony Ct
S Tommy Ct
Vicinity Map
Betty
Riggin
Dinuba
Plaza
Goshen
Shirk
Main
Houston
Hwy 198
Akers
Demaree
Walnut
Noble
Hwy 99
Mooney
Court
Lovers Lane
General Plan
Land Use Map
0
0.05
0.1
0.2 Miles
Conservation
Commercia Mixed Use
Commercial Neighborhood
Public Institutional
Parks/Recreation
Reserve
Residential High Density
Residential Low Density
Residential Medium Density
Residential Very Low Density
CITY LIMITS
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W
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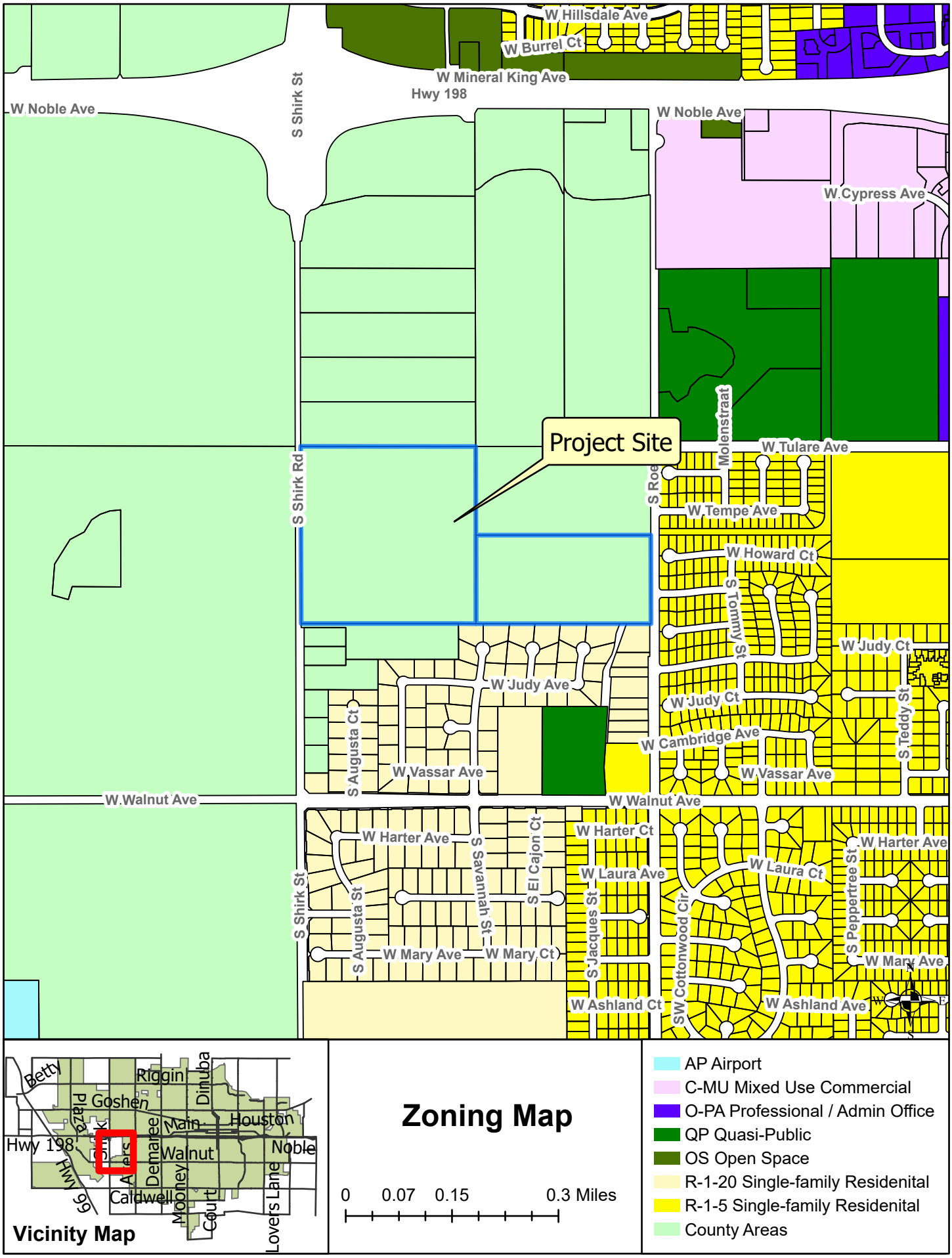
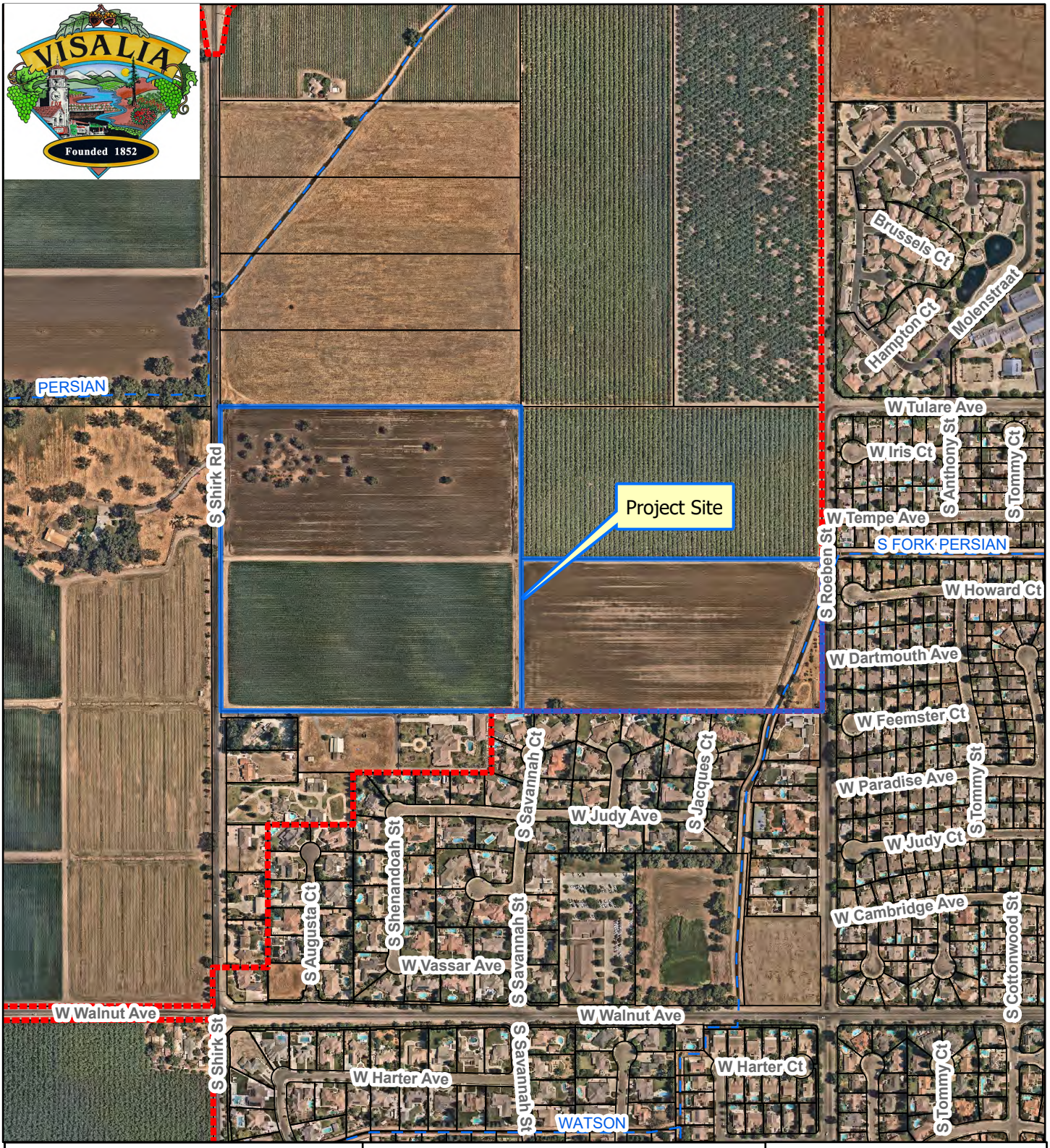
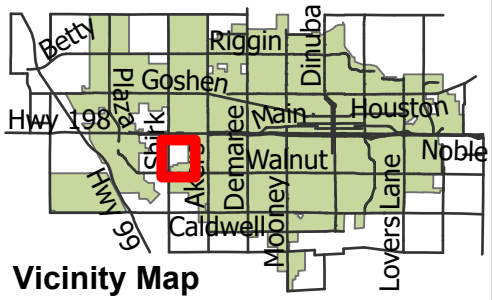
S


W Hillsdale Ave
W Burrel Ct
W Mineral King Ave
Hwy 198
S Shirk St
W Noble Ave
W Noble Ave
W Cypress Ave
Project Site
S Shirk Rd
Molenstraat
W Tulare Ave
S Roe
W Tempe Ave
W Howard Ct
S Tommy St
W Judy Ct
W Judy Ave
W Judy Ct
S Teddy St
S Augusta Ct
W Cambridge Ave
W Vassar Ave
W Vassar Ave
W Walnut Ave
W Walnut Ave
W Harter Ave
S Savannah St
S El Cajon Ct
W Harter Ct
W Harter Ave
W Laura Ave
W Laura Ct
S Shirk St
S Augusta St
S Jacques St
S Peppertree St
W Mary Ave
W Mary Ct
W Mary Ave
SW Cottonwood Cir
W Ashland Ct
W Ashland Ave
Betty
Riggin
Dinuba
Goshen
Plaza
Main
Houston
Hwy 198
Demaree
Walnut
Noble
Hwy 99
Caldwell
Mooney
Court
Lovers Lane
Vicinity Map
Zoning Map
0
0.07
0.15
0.3 Miles
AP Airport
C-MU Mixed Use Commercial
O-PA Professional / Admin Office
QP Quasi-Public
OS Open Space
R-1-20 Single-family Residenital
R-1-5 Single-family Residenital
County Areas





Vicinity Map

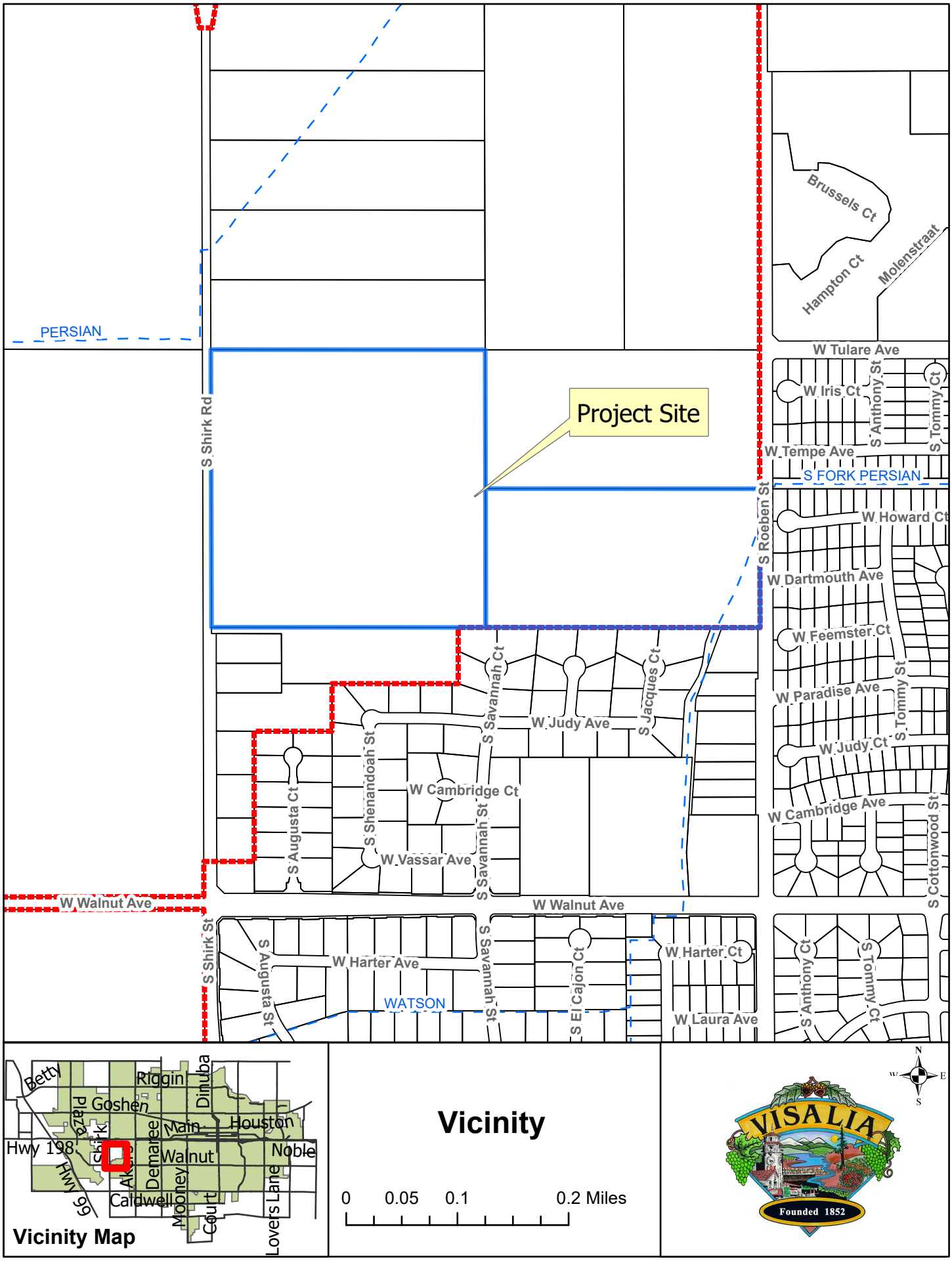
Aerial Map

0 0.05 0.1 0.2 Miles

N W E S

Legend

Street Names
WATERWAYS
CITY LIMITS
PARCELS
Aerial Map
RGB
Red: Band_1
Green: Band_2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Demaree
Walnut
Noble
Hwy 99
Akers
Caldwell
Mooney
Court
Lovers Lane
Vicinity Map
Vicinity
0
0.05
0.1
0.2 Miles
N
W
E
S
VISALIA
Founded 1852