



# Second Partial Recirculated Draft Environmental Impact Report Cumulative Toxic Air Contaminant Impact Analysis Only Visalia Walmart Expansion Project

State Clearinghouse No. 2008121133

## Appendix M



City of Visalia • May 2015



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**Second Partial Recirculated Environmental Impact Report  
Visalia Walmart Expansion Project  
City of Visalia, Tulare County, California  
Cumulative Toxic Air Contaminant Impact Analysis Only**

**State Clearinghouse No. 2008121133**

**APPENDIX M**

Prepared for:



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March 31, 2015

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**Appendix M:  
Toxic Air Contaminant Cumulative Contribution  
Threshold Supplementary Review**

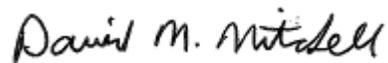
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May 8, 2015  
Mr. Paul Scheibel, Planning Services Manager  
City of Visalia  
315 E. Acequia Avenue  
Visalia, CA 93291

**Re: Toxic Air Contaminant Cumulative Contribution Threshold Supplementary Review**

FirstCarbon Solutions (FCS) conducted a supplementary review of the toxic air contaminant cumulative contribution threshold used for the Visalia Walmart Expansion Project (Project) to ensure that the threshold is supported by substantial evidence as required by CEQA. The First Partial Recirculated Draft Environmental Impact Report (PRDEIR), Appendix J, included an extensive discussion regarding options for a cumulative contribution threshold that were considered by other jurisdictions. The following supplementary review provides additional information to support the use of alternatives to the increased cancer risk of 10 in a million TAC cumulative contribution threshold previously used in the PRDEIR.

Sincerely,



David M. Mitchell, Senior Air Quality Scientist  
**FirstCarbon Solutions**  
7265 N. First Street, Suite 101  
Fresno, CA 93720

## CUMULATIVE THRESHOLD SUPPLEMENTARY REVIEW

### Introduction

FirstCarbon Solutions (FCS) reviewed potential toxic air contaminant (TAC) cumulative contribution thresholds to determine if the 10 in a million increase in cancer risk used in the First Partial Recirculated Draft Environmental Impact Report (PRDEIR) or some other threshold was supported by substantial evidence and appropriate for the conditions experienced in the City of Visalia. Comments received from project opponents during the First PRDEIR public review process questioned whether 10 in a million was sufficiently stringent, due to the level of existing health risk impacts from TAC emissions in the City of Visalia. The First PRDEIR included a full discussion of the adequacy of the cumulative contribution threshold in the Threshold Justification Document (Appendix A of the Health Risk Assessment).

In addition to the information contained in the Cumulative Toxic Air Contaminant Threshold Document, PRDEIR, and Final PRDEIR, the following information has been verified and/or updated in connection with preparation of the Second PRDEIR:

- The San Joaquin Valley Air Pollution Control District (SJVAPCD) and South Coast Air Quality Management District (SCAQMD) confirmed that they consider 10 in one million to be an appropriate cumulative contribution threshold. The Sacramento Metropolitan Air Quality Management District (SMAQMD) CEQA Guide to Air Quality Assessment also specifically refers to 10 in a million as a cumulative contribution threshold.
- FCS assessed TAC background risk in other parts of the State and determined that risk from TACs in Visalia is similar to that experienced in other California urban areas, and is much lower than the most populated areas of the State.
- FCS provided additional discussion of regulatory programs in place to reduce significant cumulative TAC impacts.
- Information from the ARB and air districts indicates that risk statewide and in the San Joaquin Valley is declining, but still exceeds the 100 in a million cumulative threshold used in the First PRDEIR by a substantial margin when background is included.
- The ultimate decision on whether the 10 in a million or some other threshold is appropriate is a policy decision within the purview of the Lead Agency.

### Cumulative Threshold

There are no concentration-based standards for TAC emissions (such as state and federal air quality standards adopted for ozone and particulate matter) that can be used as a basis for a cumulative TAC threshold. There are no state or federal plans that require the reduction of TAC emissions or risk to specific levels. In addition, there is no level of exposure to TAC emissions that does not present some degree of health risk. Therefore, a determination of acceptable risk must be made. Normal

practice for adoption of air quality thresholds by Lead Agencies is to rely on thresholds adopted by other agencies with expertise in air quality. The First PRDEIR identified a cancer risk of 100 in a million as the level of acceptable risk, based on information presented by the Bay Area Air Quality Management District (BAAQMD) in support of its threshold approach. U.S. Environmental Protection Agency (EPA) guidance in the preamble to the benzene National Emissions Standards for Hazardous Air Pollutants (NESHAP) rulemaking (54 Federal Register 38044, September 14, 1989) states: “In protecting public health with an ample margin of safety, EPA strives to provide maximum feasible protection against risks to health from hazardous air pollutants (HAPs) by limiting risk to a level no higher than the one in ten thousand (100 in a million) estimated risk that a person living near a source would be exposed to at the maximum pollutant concentrations for 70 years.”

The First PRDEIR applied this threshold to cumulative emission sources within 1,500 feet of the project site to determine significance. The Court ruled that this approach was incorrect because it did not include the average background risk in determining whether the cumulative threshold was exceeded under existing background conditions without the project, thereby triggering the second step of the analysis to determine whether the project makes a cumulatively considerable contribution to an existing significant cumulative impact. The Court held that disclosure of the average background risk (as was done in the First PRDEIR) was not sufficient. In order to comply with the Court’s Statement of Decision, the Second PRDEIR recognizes an existing significant cumulative TAC impact without the project, and applies the cumulative contribution threshold to determine whether the project’s contribution to this impact is cumulatively considerable.

### Cumulative Contribution Criteria

The City considered the following information when adopting a threshold for determining whether a project’s contribution is cumulatively considerable:

- The severity of the pre-existing condition as estimated from monitoring data at the nearest monitoring stations;
- Whether existing impacts and impacts from sources near the project site are so severe that they would warrant a special cumulative contribution threshold for heavily impacted areas;
- Thresholds adopted by other jurisdictions and air quality agencies for regulatory and CEQA purposes that could be applied as a cumulative contribution threshold; and
- The existence of plans or regulations to reduce the significant existing cumulative impact.

### Significance of the Pre-Existing Condition

The Final PRDEIR reported a preexisting TAC risk of 489 in a million as estimated from monitoring data from the nearest monitoring station and a special study of TAC impacts on children conducted in the region. A comparison of the San Joaquin Valley’s estimated TAC risk with other parts of California is instructive. The California Air Resources Board (ARB) Almanac provides average risk estimates for the State’s largest air districts. The average risk reported for the largest air basins for 1980, 1990, and 2000 is presented in Table 1. The ARB has not generated estimates of diesel

particulate matter (DPM) since 2000. However, continued declines in DPM emissions are expected well into the future with the implementation of ARB's Diesel Risk Reduction Plan (DRRP) and related regulations on diesel engines.

**Table 1: TAC Average Cancer Risk in Major California Air Basins**

Air Basin	1980 (cancer risk per million)	1990 (cancer risk per million)	2000 (cancer risk per million)
San Joaquin Valley Air Basin	1,230	815	586
Sacramento Valley Air Basin	1,135	705	520
San Diego Air Basin	1,269	843	607
San Francisco Bay Area Air Basin	1,153	884	659
South Coast Air Basin	1,696	1,315	1,005

Source: ARB Almanac, 2009.

Two conclusions can be drawn from the data in Table 1. First, the average risk from TAC emissions in the San Joaquin Valley is similar to California's other major urban areas. Sacramento has a slightly lower average risk, and San Diego and the San Francisco Bay Area experience slightly higher average risk. The South Coast Air Basin has substantially higher average risk than all the other areas. This means that the majority of California's population was exposed to cancer risk from airborne TAC emissions of over 500 in a million in 2000. The year 2000 is the most recent year with full TAC emission reports in the ARB Almanac. The 2013 Almanac does not provide health risk estimates for TAC emissions and no other more recent data was located; however, it does include DPM emission inventory trends and forecasts for the San Joaquin Valley Air Basin (SJVAB). The Almanac shows that DPM emissions decline from 16 tons per day in 2000 to an expected 6 tons per day in 2015. DPM emissions are forecasted to decline to 3 tons per day by 2035. In addition, the SJVAPCD 2015 GAMAQI indicates that the cancer risk using current risk assessment methodologies has dropped from about 1,200 in a million in 1990 to under 200 in a million today. Although the risk declined by 52 percent in the SJVAB between 1980 and 2000 in the face of rapid growth during that period and based on information in the 2015 GAMAQI the risk has continued to decline since 2000, the amount of risk is still unacceptably high. Based on a cumulative TAC threshold risk of 100 in a million, the San Joaquin Valley and most of the rest of the State would be subject to a significant cumulative impact from existing TAC emissions.

In summary, the San Joaquin Valley and the City of Visalia are currently subject to TAC emissions that are similar to the rest of the State, and the resulting cancer risk is well in excess of the 100 in a million cumulative threshold (nearly five times the threshold).

### The Importance of Localized Sources of TAC Emissions

The next question to be answered is whether TAC impacts from sources near the project, in addition to the background average risk, are such that a lower cumulative contribution threshold should be

considered by the City of Visalia. If sensitive receptors near the project are exposed to risks from other nearby sources that would result in substantially greater than background average risk, additional action may be appropriate in those areas. This is the approach used by the BAAQMD, which defined a “significant cumulative impact from localized sources” as the combined risk from sources within 1,000 feet of a project of 100 in a million.

Average background risk presented in Table 1 does not identify the actual risk at any single location because of the effects of localized sources on nearby sensitive receptors, and the rapid dispersion of pollutants with distance. After a relatively short distance, the concentration of TACs will have declined to the point where they are indistinguishable from background concentrations. Therefore, characterization of a project’s cumulative impacts must consider background concentrations and the emissions from nearby sources that directly impact the same sensitive receptors as the project.

As discussed in the First PRDEIR, the background risk in the region is a result of the transport and mixing of emissions from numerous sources over a wide area. The First PRDEIR explained that background risk estimates are highly uncertain, due to limited monitoring and measurement capability for TAC emissions. No detailed monitoring of TAC emissions or regional modeling has been accomplished in Visalia or at other San Joaquin Valley locations to determine the variation of risk within the City. Studies have been accomplished in the South Coast Air Basin that show the variation in risk due to proximity to large sources. The most recent studies conducted by the South Coast Air Quality Management District (SCAQMD) under the Multiple Air Toxics Exposure Study (MATES III)<sup>1</sup> identified high risks close to high volume freeways and ports. The MATES III Final Report issued in 2008 indicates that the grid cell with the highest air toxics risk was at the ports (Los Angeles and Long Beach). The grid cells near the ports ranged from about 1,100 to 3,700 in a million. In addition to the ports, an area of elevated risk is shown near the Central Los Angeles area with 2-kilometer grid cells ranging from about 1,400 to 1,900 in a million. There are also higher levels of risk along transportation corridors and freeways. The carcinogenic risk from air toxics in the South Coast Air Basin, based on the average concentrations at the fixed monitoring sites, was about 1,200 in a million. See Figure 2-1 of the First Final PRDEIR for an illustration of the effect of local emission sources on concentrations across an urban area. The point here is that large concentrations of TAC sources can cause local risk to vary by several orders of magnitude compared with the average risk in the larger air basin.

Heavily impacted areas such as identified by MATES require additional efforts to reduce the risk to the people living in those areas. The SCAQMD is implementing special emission reduction programs for the ports and is working with impacted communities to reduce emissions in those areas. The SCAQMD has not officially adopted a cumulative threshold based on background risk, but applies a 10 in a million threshold as a cumulative contribution to all projects regardless of the existing impact (email from Ian McMillan, SCAQMD June 4, 2014).

The BAAQMD has analyzed regional and localized TAC emissions through modeling used in developing its Community Air Risk Evaluation (CARE) program. The highest cancer risk levels from

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<sup>1</sup> SCAQMD 2008 Multiple Air Toxics Exposure Study (MATES III) available from the SCAQMD. The Air District website has been redesigned and internet access to the report is not currently available.

ambient TAC in the San Francisco Bay Area Air Basin also tend to occur in the core urban areas, along major roadways and adjacent to freeways. Cancer risks from DPM alone in areas along these major freeways are estimated to range from 200 to over 500 excess cases in a million. The BAAQMD performed a population weighted ambient cancer risk analysis and found that 8 percent of the Bay Area population is exposed to a risk exceeding 1,000 in a million. The BAAQMD has updated its mapping of these areas in 2013 and its April 2014 report shows considerable improvement in TAC risk levels throughout its entire jurisdiction. According to the most recent reports prepared by the BAAQMD, average regional risk has dropped from 625 in a million in 2001 to 300 in a million in 2012. Rural and non-urban areas comprising approximately half of the land area in the region are shown in the updated mapping to experience a risk of less than 100 in a million. The BAAQMD is implementing Community Risk Reduction Plans (CRRPs) in its most impacted areas. For CEQA purposes, BAAQMD recommends project compliance with an adopted CRRP in areas identified as impacted by cumulative sources. Projects outside CRRP areas would be subject to a 100 in a million cumulative threshold for sources within 1,000 feet of the project, and a 10 in one million project threshold.<sup>2</sup> As was stated in the First PRDEIR's Cumulative Toxic Threshold Document, the BAAQMD considered using a 5 in a million project threshold in the heavily impacted areas, but rejected that option in favor of using a plan consistency approach to cumulative significance. The BAAQMD justification for not choosing a 5 in a million threshold is provided below:

The justification for the Tiered Thresholds Option threshold of 5.0 in one million for new sources in an impacted community is that in these areas the cancer risk burden is higher than in other parts of the Bay Area; the threshold at which an individual source becomes significant is lower for an area that is already at or near unhealthy levels. However, even without a tiered approach [and its lower 5/million project-level threshold for impacted areas,] the recommended thresholds already address the burden of impacted communities via the cumulative thresholds: specifically, if an area has many existing TAC sources near receptors, then the cumulative threshold will be reached sooner than it would in another area with fewer TAC sources.

In the absence of a regional study with intensive monitoring as was accomplished by the SCAQMD, or detailed modeling as was accomplished in the BAAQMD, dispersion modeling was used to assess the impacts actual sources of TAC emissions within 1,500 feet of the project site. The City of Visalia has no sources approaching the scale of the ports and freeways in the SCAQMD and the BAAQMD, however, the project site is near the State Route 198 freeway, a rail line and several other sources that contribute to cumulative emissions. The First PRDEIR reported a cumulative contribution of TAC risk from all sources within 1,500 feet of the project as 23.9 in a million. See Table 15 of the First PRDEIR, Appendix J: Cumulative Health Risk Assessment for a list of the sources and their individual impact on the project's maximally exposed receptor.

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<sup>2</sup> On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD failed to comply with CEQA when it adopted the Thresholds of Significance. The court did not determine whether the Thresholds were valid on the merits, but found that the adoption of the Thresholds was a project under CEQA. The court issued a writ of mandate ordering the BAAQMD to set aside the Thresholds and cease dissemination of them until the Air District had complied with CEQA. The Court of Appeal of the State of California, First Appellate District, reversed the trial court's decision. The Court of Appeal's decision was appealed to the California Supreme Court, which granted limited review, and the matter is currently pending there.

Based on the higher potential risk at locations with concentrations of nearby TAC sources, it is appropriate to consider actual sources near project sites, in addition to background risk, in order to accurately portray the project's contribution to TAC risk for nearby sensitive receptors. One caveat is that the localized sources of TAC emissions also contribute to background emissions, as reported at the nearest monitoring station, so some of the risk will be double counted. However, the double counting would result in a more conservative estimate of the impacts.

Under the BAAQMD cumulative TAC threshold approach used in the First PRDEIR, the cumulative contribution threshold was not triggered because the total risk from the project and existing and planned probable sources within 1,500 feet were below the 100 in a million cumulative threshold. The Court ruled that assessing impacts only from sources within a 1,500-foot radius was not adequate to describe the cumulative impact from all ambient, background sources impacting the City of Visalia. Combining the most conservative estimate of background emissions with the modeled emissions within 1,500 feet results in a cumulative risk of 513 in a million, without the project. Based on the combined risk, the cumulative impacts exceed the 100 in a million cumulative TAC threshold, requiring the use of a cumulative contribution threshold to determine whether the project's individual contribution is cumulatively considerable.

### Toxic Threshold History

As part of its review, FCS examined the history of thresholds used for TAC emissions in a regulatory context, and their later use for CEQA purposes. The history of TAC threshold development by California air pollution control districts provides insight into the widespread adoption of a 10 in a million project threshold for CEQA purposes. The Toxic Air Contaminant Identification and Control Act (AB 1807, Tanner 1983) created California's program to reduce exposure to air toxics. Assembly Bill (AB) 2588—the Air Toxics Hot Spots Information and Assessment Act of 1987—established a statewide program for inventory of toxic emissions from individual stationary source facilities as well as requirements for assessment and public notification. AB 2588 required air districts to prioritize each facility by high, intermediate, and low categories considering potency, toxicity, and proximity to potential receptors. In 1992, the California legislature added a risk reduction component, the Facility Air Toxic Contaminant Risk Audit and Reduction Plan (or Senate Bill 1731), which required the District to specify a significant risk level above which risk reduction would be required. These early regulatory efforts to control TAC emissions were focused on stationary sources such as refineries, factories, power plants, gas stations, dry cleaners, etc. Air District regulations adopted for TAC emissions focus on the level of impact to the nearest receptor, and do not account for background risk.

Under guidance developed by the California Air Pollution Control Officers Association (CAPCOA) for air districts to implement AB 2588, facilities with a screening risk score greater than or equal to 10 in one million were designated high priority facilities that would require a health risk assessment. The guidance was clear that the air districts could set the prioritization thresholds at other levels; however, in practice most districts used the recommended prioritization framework. For example, the SJVAPCD's Risk Management Policy for Permitting New and Modified Sources requires prioritization to be accomplished in accordance with CAPCOA Facility

Prioritization Guidelines.<sup>3</sup> The SJVAPCD Risk Management Policy defines a significant cancer risk as an increase in the maximum excess cancer risk of at least 10 in one million.

The AB 2588 Hot Spot requirements raised awareness around the State of the potential for TAC impacts in general, but also in a CEQA land use project context for permitted sources and for non-permitted sources of TAC emissions, such as on-road and off-road mobile sources of DPM. This led the major air districts to adopt thresholds and analysis procedures for TAC impacts in the 1990s. The SJVAPCD first adopted the Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI) in 1998, which was revised in 2002.<sup>4</sup>

The author of this review, Dave Mitchell, was the primary author of the GAMAQI in his capacity as an employee of the SJVAPCD, and participated on the CAPCOA land use committee on issues related to land use and CEQA during this period. The GAMAQI based its TAC threshold on the AB 2588 Risk Management Policy threshold of 10 in one million in all versions of the document. As stated in the First PRDEIR and First Final PRDEIR, the 2002 GAMAQI does not include a threshold for cumulative TAC impact, but merely recommends that TAC sources within one mile of the project should be screened to determine exposure levels from the combined emissions of all sources. The GAMAQI cumulative approach proved infeasible to implement because determining whether a significant cumulative impact exists without the project is not possible without a quantitative cumulative threshold that considers existing conditions.

The focus of the regulatory efforts was on “hot spots” with the potential to result in an increase in risk to the nearest sensitive receptors from the facility. Thresholds developed for use in regulatory programs focused on emissions from individual pieces of equipment or processes and from facilities, rather than cumulative sources over a wide area. However, the net effect of controls on individual sources has been the steady decline in TAC emissions and their associated cancer risk locally and regionally.

## Review of Existing Toxic Thresholds

FCS reviewed thresholds promulgated by California air pollution control districts and air quality management districts to determine if any area has adopted a cumulative contribution threshold or a specific approach to addressing cumulative TAC impacts. The results of the review are presented in Table 2.

**Table 2: Review of Air District TAC Thresholds**

Air District	Project Threshold (Cancer Risk)	Cumulative Threshold
San Joaquin Valley Air Pollution Control District	10 in a million	10 in a million cumulative contribution (GAMAQI 2015)
Bay Area Air Quality Management District	10 in a million	100 in a million cumulative threshold (2010 CEQA Air Quality Guidelines)

<sup>3</sup> CAPCOA 1990. Air Toxic Hot Spots Program, Facility Prioritization Guidelines. Website: <http://www.arb.ca.gov/ab2588/rrap-iwra/priguide.pdf>. Accessed June 8, 2014.

<sup>4</sup> SJVAPCD. 2002. Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI). Website: <http://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI%20Jan%202002%20Rev.pdf>. Accessed June 8, 2014.

Air District	Project Threshold (Cancer Risk)	Cumulative Threshold
South Coast Air Quality Management District	10 in a million	Email from SCAQMD indicates 10 in a million is the cumulative contribution threshold (SCAQMD Air Quality Significance Threshold from SCAQMD website)
San Luis Obispo Air Pollution Control District	10 in a million	89 in a million (type B projects for receptors locating near existing sources) (CEQA Air Quality Handbook, 2012)
Ventura County Air Pollution Control District	10 in a million	None (Ventura County Air Quality Assessment Guidelines, 2003)
Sacramento Metropolitan Air Quality Management District	10 in a million	The District considers project level mitigation sufficient to mitigate cumulative TAC impacts (Guide to Air Quality Assessment in Sacramento County, 2014)
Monterey Bay Unified Air Pollution Control District	10 in a million	None (CEQA Air Quality Guidelines, 2008)
Yolo Solano Air Quality Management District	10 in a million	None (Handbook for Assessing and Mitigating Air Quality Impacts, 2007)

Source: Information obtained from Air District CEQA Guidance Documents.

The 2015 GAMAQI specifically provides 10 in a million as the SJVAPCD cumulative contribution threshold, but does not define a level where TAC impacts are cumulatively significant.<sup>5</sup> The 2015 GAMAQI includes the following discussion regarding the basis for risk thresholds that indicates that the SJVAPCD considered existing TAC impacts to be significant throughout the air basin.

A key factor in establishing the District’s risk thresholds was the background risk levels. The 10 in a million risk threshold was established in 1995. According to the 2009 California Almanac of Emissions and Air Quality, the background cancer risk in 1990 was estimated at about 1,200 in a million. The District’s comprehensive regulatory and incentive-based programs, combined with state and federal air toxic control regulations, have significantly reduced the public’s exposure to air toxics over the past two decades. The cancer risk using current risk assessment methodologies has dropped from about 1,200 in a million in 1990 to under 200 in a million today.

However, without specifically defining what is cumulatively significant, the SJVAPCD approach would not satisfy the Court’s ruling. The SCAQMD also indicates that 10 in a million is the cumulative contribution threshold, but does not specifically define what constitutes a significant cumulative

<sup>5</sup> SJVAPCD. 2015. Guidance for Assessing and Mitigating Air Quality Impacts. February. Website: [http://www.valleyair.org/transportation/GAMAQI\\_3-19-15.PDF](http://www.valleyair.org/transportation/GAMAQI_3-19-15.PDF). Accessed May 8, 2015.

impact. The Sacramento Metropolitan Air Quality Management District (SMAQMD) indicates in its guidance document that project level mitigation would mitigate cumulative TAC impacts to be less than cumulatively considerable.<sup>6</sup>

The 10 in a million threshold has been widely accepted and used exclusively by Lead Agencies for projects requiring risk assessments in the San Joaquin Valley and other air basins in California for over 15 years. According to page 11 of the “CAPCOA Health Risk Assessments for Proposed Land Use Projects Guidance Document”, the majority of air districts have set the excess cancer risk significance threshold at 10 in a million.<sup>7</sup> Review of current air district guidelines found no examples that use other than 10 in a million for project risk, and no cumulative contribution threshold lower than 10 in a million.

According to CAPCOA, significance levels have been approached differently by air districts as enumerated below:

- Thresholds can be based on a specific risk level such that a 10 in a million excess cancer risk and an acute and chronic hazard index of one should not be exceeded. These thresholds tend to be consistent with the Hot Spot Program thresholds.
- Thresholds can also be based on the region’s existing background cancer risk value if one exists.
- Another option is to look at the ambient risk in the immediate vicinity of the project area rather than the regional risk level.
- Case by case thresholds may also be defined.

The supplementary review of air district guidance documents and communication with air district staff summarized in Table 2 identified three air districts that specifically recommend application of a 10 in a million project threshold as a cumulative contribution threshold. The air districts that utilize this approach include the SJVAPCD, the South Coast Air Quality Management District (SCAQMD) and the Sacramento Metropolitan Air Quality Management District (SMAQMD). Under the method all three districts follow, if a project’s contribution falls below 10 in a million, it has neither a significant project-level impact nor a significant cumulative impact.

The SJVAPCD’s 2015 GAMAQI recommends use of the 10 in a million threshold for determining project-level and cumulative impacts, without defining what would constitute an existing significant cumulative impact.<sup>8</sup> Review of guidance from other air districts with published TAC thresholds found

<sup>6</sup> SMAQMD. 2014. CEQA Guide to Air Quality Assessment, Chapter 8 Cumulative Air Quality Impacts. June Update. Website: <http://www.airquality.org/ceqa/ceqaguideupdate.shtml>. Accessed June 8, 2014.

<sup>7</sup> CAPCOA. 2009. CAPCOA Health Risk Assessments for Proposed Land Use Projects Guidance Document. Website: [http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA\\_HRA\\_LU\\_Guidelines\\_8-6-09.pdf](http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf). Accessed June 8, 2014.

<sup>8</sup> In the 2015 GAMAQI, the SJVAPCD has identified a threshold of significance for cumulative TACs, stating: “Impacts from hazardous air pollutants are localized impacts. As presented [in section 8.3 of the 2015 GAMAQI], the District has established thresholds of significance for TACs that are extremely conservative and protective of health impacts on sensitive receptors. Because impacts from TACs are localized and the thresholds of significance for TACs have been established at such a conservative level, risks over the individual thresholds of significance are also considered cumulatively significant. No other cumulative risk thresholds apply.” Thus, the level set for risk thresholds in the Draft 2014 GAMAQI is the project level 10-in-a-million new cases per project threshold.

that they all recommend a 10 in a million project-level threshold, but include no specific cumulative threshold or discussion of the concept of cumulative contribution to an existing cumulative impact. The practice of these three air districts does not assist the City in its considering and setting an appropriate cumulatively considerable threshold that fulfills the two step approach.

CEQA requires a cumulative impact analysis that is distinct from a project-level impact analysis. In making a cumulative impact determination, a lead agency considers whether the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effect of probable future projects (CEQA Guidelines Sections 15065(a)(3) and 15130). As such, these districts' failure to quantify existing cumulative TAC impacts and determine if they are significant precludes a cumulative impact analysis required by CEQA. Without preliminarily determining cumulative significance of existing TAC impacts, the "second step" of determining whether a project makes a cumulative considerable contribution to that impact is impossible. Without the districts first defining what constitutes a significant cumulative impact, applying the 10 in a million project-level threshold to determine "cumulative significance" does not comply with CEQA, and as such, does not assist the City in its considering and setting an appropriate cumulatively considerable threshold.

The BAAQMD threshold approach does not adequately address the issue of projects proposed in areas that exceed 100 in a million without the project. The BAAQMD specifically considered and rejected use of a 10 in a million project-level TAC threshold as a cumulative contribution threshold presented to the Board as the *"Incremental Risk Approach."* (See BAAQMD, Revised Draft Options and Justification Report Oct. 2009 at p. 25). BAAQMD instead adopted a 100 in a million cumulative TAC significance threshold was presented as *Board Option 2 – Absolute Risk Approach*, under which a significant cumulative TAC impact was found if emissions from all cumulative sources within 1,000 feet from the project exceeded 100 cases per million.

The BAAQMD approach does not comply with a two-step threshold needed when existing conditions present a significant cumulative impact without the project. In setting a Step Two threshold, the Tulare County Superior Court observed that "[t]he relevant question to be addressed is not the relative amount of project emissions compared with pre-existing conditions, but whether any additional amount should be considered significant in light of an already serious condition" (Kings County Farm Bureau [Oct. 2013 Decision, p. 4:6–9]). The Superior Court observed that this does not necessarily mean that any incremental contribution to an existing cumulatively significant environmental condition, no matter how small, must always be treated as a significant cumulative impact; the one-additional-molecule rule is not the law. The BAAQMD determined that any additional contribution in an area with a pre-existing 100 in a million impact from sources within 1,000 feet would be cumulatively significant (background risk not included). Without a cumulative contribution threshold for areas with an existing significant cumulative impact, the BAAQMD has applied a one additional molecule threshold. However because the threshold does not include background risk, only projects near large sources of TACs like freeways would occur in areas with existing significant cumulative impacts as defined by the BAAQMD. If the BAAQMD included background risk in its determination of cumulative impacts, all Bay Area urban areas would have significant cumulative impacts. All development projects no matter how small would have a

significant and unavoidable cumulative impact due to TAC emissions that would require the preparation of an EIR. Therefore, the BAAQMD threshold does not provide a usable example for the City to use.

As the First PRDEIR's Cumulative Toxic Air Contaminant Threshold Document noted, the BAAQMD also considered a project-level significance threshold of 5.0 in a million to have applied in Impacted Areas to reflect the greater TAC risk exposures to the populations residing there. A project-level significance threshold of 10 cases per million would apply in non-impacted areas. However, the lower 5.0 in a million threshold was found unnecessary. According to the BAAQMD,

“The justification for the Tiered Thresholds Option threshold of 5.0 in one million for new sources in an impacted community is that in these areas the cancer risk burden is higher than in other parts of the Bay Area; the threshold at which an individual source becomes significant is lower for an area that is already at or near unhealthy levels. However, even without a tiered approach [and its lower 5/million project-level threshold for impacted areas,] the recommended thresholds already address the burden of impacted communities via the cumulative thresholds: specifically, if an area has many existing TAC sources near receptors, then the cumulative threshold will be reached sooner than it would in another area with fewer TAC sources.”

Since approximately 2005, BAAQMD has analyzed regional and localized TAC emissions through modeling used in developing its Community Air Risk Evaluation (CARE) program. The program was developed to address community risk from air toxics by identifying locations with high levels of risk from TACs co-located with sensitive populations and use the information to help focus mitigation measures.

### **Comparative Analysis with other Risk Benchmarks**

FCS conducted a comparative analysis of thresholds adopted for other purposes by other agencies to assess their potential applicability to a cumulative contribution threshold.

The EPA, the agency responsible for setting national air quality standards, considers 100 in a million as an acceptable risk for facilities and communities. A 10 in a million risk is a mere one-tenth of EPA's acceptable risk level. A 5 in a million risk is one twentieth of EPA's acceptable risk level. 10 in a million is about 2 percent of the 489 in a million risk estimated in the PRDEIR for the City of Visalia. 5 in a million is about 1 percent of the 489 in a million risk.

The First PRDEIR considered the SJVAPCD Risk Management Policy threshold, which requires new and modified sources with a greater than a de minimis increase in cancer risk (one in a million) to apply T-BACT to control emissions to the maximum extent feasible. As was stated in the First PRDEIR, the threshold was deemed inappropriate for application to the project. The T-BACT threshold applies to individual pieces of equipment, not to facilities or projects that have multiple pieces of equipment. Project trucks already comply with the equivalent of T-BACT through ARB truck and fuel regulations. Therefore, a one in a million cumulative contribution threshold was eliminated from further consideration.

## Plans and Regulations to Reduce Significant Cumulative TAC Impacts

The existence of plans and regulations that reduce significant cumulative impacts is an important consideration in determining whether cumulative impacts are significant and if a project's contribution is cumulatively considerable. If impacts are increasing and no effective regulatory program was in place, impacts would be considered worse. If the regulatory program will ultimately eliminate the cumulative impact, project impacts would be a lesser concern. The Health Risk Assessment prepared for the First PRDEIR (Appendix J) in section 2.1.1 includes descriptions of regulations in place to reduce TAC emissions. A summary of the most important applicable regulations is provided below.

### Air Resources Board Plans and Regulations

ARB is responsible for developing statewide programs and strategies to reduce the emission of smog-forming pollutants and toxics by mobile sources. These include both on- and off-road sources such as passenger cars, motorcycles, trucks, buses, heavy-duty construction equipment, recreational vehicles, marine vessels, lawn and garden equipment, and small utility engines.

**Diesel Risk Reduction Plan (DRRP).** ARB's DRRP was adopted in September 2000. The goal of the DRRP is to reduce DPM emissions and the associated health risk by 75 percent in 2010 and 85 percent by 2020.<sup>9</sup>

The primary provisions of the DRRP measures accomplished the following:

- Establish more stringent emission standards for new diesel-fueled engines and vehicles;
- Establish particulate trap retrofit requirements for existing engines and vehicles where traps are determined to be technically feasible and cost-effective;
- Require the sulfur content of diesel fuel to be reduced to enable the use of advanced DPM emission controls; and
- Evaluate alternatives for diesel-fueled engines and vehicles.

**California's Low Emission Vehicle (LEV) Program.** The ARB reports that a new 1965 car produced about a ton of smog forming hydrocarbons during 100,000 miles of driving. California's low emission vehicle standards have reduced that amount to around 10 pounds from the average new car in 2010. Hydrocarbons include components that are TACs such as benzene. The LEV program completed its third update in 2012, with LEV III standards providing substantial reductions in emission from new cars in vehicles sold from 2015 and later. ARB expects LEV III to reduce reactive organic gas emissions by 34 percent by 2035.

**California Offroad Vehicle Emissions Regulations.** ARB expects that with the adoption of the last round of amendments to the offroad regulations, DPM emissions from off-road diesel vehicles will

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<sup>9</sup> ARB 2000. Final Diesel Risk Reduction Plan. September. Website: <http://www.arb.ca.gov/diesel/documents/rrpapp.htm>. Accessed June 8, 2014.

have dropped over 40 percent from 2010 levels by 2020, and by 2030, they will have dropped more than 75 percent from 2010 levels.

**ARB Final Regulation Order, Requirements to Reduce Idling Emissions from New and In-Use Trucks Truck Idling Regulation.** Requires that new 2008 and subsequent model-year heavy-duty diesel engines be equipped with an engine shutdown system that automatically shuts down the engine after specified timeframes (generally 5 minutes).

**ARB Regulation for In-Use Off-Road Diesel Vehicles.** The regulation limits idling for off-road diesel vehicles to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale.

**Statewide Truck and Bus Rule.** Requires the installation of particulate matter filters, and retrofit of older engines with engines 2010 or newer on a phased schedule.

**Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines Rated at 50 horsepower and Greater.** Effective February 19, 2011, each fleet shall comply with weighted reduced particulate matter emission fleet averages by compliance dates listed in the regulation

### San Joaquin Valley Air Pollution Control District Regulations

**Rule 2201 – New and Modified Stationary Source Review.** The rule requires stationary sources meeting applicability thresholds to implement Best Available Control Technology for Toxics (T-BACT). Projects that exceed an increased cancer risk of 10 in one million are not approved.

The regulations adopted to control TAC emissions have substantially reduced TAC impacts throughout the State, as evidenced by the reduction in risk between 1980 and 2000 as shown in Table 1, and ARB's estimates of the benefits of individual regulations implemented as part of the Diesel Risk Reduction Plan of 85 percent by 2020. In conclusion, regulations are in place to substantially reduce significant impacts from TAC emissions. The primary source of TAC impacts from the project is diesel trucks, which are subject to state regulations that will result in project emissions and related impacts declining over time. Although the regulatory program is robust, impacts will continue well into the future, so review of project cumulative TAC impacts are appropriate. Consistency with the ARB DRRP and other regulations is not adequate to eliminate cumulative TAC impacts as a concern.

### Cumulative Contribution Threshold

Review of existing and proposed TAC thresholds found none that included a quantitative assessment of background risk to define cumulative impacts. All use a 10 in a million project threshold and three major air districts consider the 10 in a million project threshold to also be an appropriate cumulative contribution threshold. In the absence of a valid two step cumulative analysis, the City is required to adopt its own thresholds.

The City considered the following information when selecting a threshold for determining whether a project's TAC contribution is cumulatively considerable:

- Availability of thresholds adopted by other jurisdictions and air quality agencies. Are air quality agency thresholds suitable for conditions in the City?
- The severity of the existing condition. Are health risks from background emissions and local TAC emissions sources at a level that requires a cumulative contribution threshold lower than the project threshold?
- Do local sources within 1,500 feet of the project alone increase the risk in the vicinity such that a cumulative contribution threshold lower than the project threshold is appropriate?
- Are regulations in place to reduce significant cumulative impacts?

The answers to these questions are provided below:

- As described earlier, no other jurisdictions have adopted suitable cumulative contribution thresholds that specifically account for background risk.
- Although improving, the existing conditions should be considered a severe impact with estimated cancer risk from background and local sources at the project site totaling 513 in a million.
- Local sources within 1,500 feet of the project alone contribute 23.9 in a million to the background cancer risk. Although not severe by comparison to other areas with larger sources of TAC emissions, a cancer risk of 23.9 in a million from local sources is not inconsequential.
- Regulations are in place that have substantially reduced TAC cancer risk and even greater reductions are expected in the future. ARB is pursuing a robust regulatory strategy to reduce DPM TAC emissions by 85 percent by 2020 from year 2000 levels. Estimates from the SJVAPCD 2015 GAMAQI indicate that current average risk in the San Joaquin Valley is 200 in a million which is substantially lower than previous estimates of background risk in the First PREIR (489 in a million). However, data used to estimate the background risk have not been released and are viewed as preliminary.

Based on this information, three options for the cumulative contribution threshold were identified.

- Option 1: Use the 10 in a million project threshold as the cumulative contribution threshold as recommended by the SCAQMD, SMAQMD, and SJVAPCD.
- Option 2: Use a lower cumulative contribution of 5 in a million in recognition of the severe existing impact.
- Option 3: Use a 1 in a million cumulative contribution threshold to provide an even more stringent threshold.

## Discussion

**Option 1.** The 10 in a million threshold has the support of agencies with expertise in air quality in the San Joaquin Valley and two other major California urban areas. However, the agencies have not embraced a two-step cumulative analysis approach. The agencies did not consider variations in risk from place to place. It would seem to be appropriate to use a lower threshold in locations with higher risk. The amount of risk deemed acceptable is a policy decision, so 10 in a million may very well be appropriate for the City of Visalia under the conditions described throughout this document and the PRDEIR. After review of all factors, the City considers existing impacts sufficient to warrant a threshold lower than the 10 in a million.

**Option 2.** The 5 in a million threshold has not been adopted or recommended by agencies with expertise in air quality. However, utilizing a more stringent threshold is within the purview of the City as the Lead Agency. The 5 in a million threshold is more stringent by half and provides an expression of concern by the City for level of existing risk in the City and at the project site. The projects location in proximity to a freeway, rail line, and other sources provide support for this option. Regulations in place to reduce cumulative TAC impacts, while making substantial progress will not result in risks below the 100 in a million cumulative threshold for some years to come. Until risk is further reduced, a 5 in a million threshold may be considered appropriate.

**Option 3:** The 1 in a million threshold option was considered but rejected as being excessively stringent based on the level of severity of the existing conditions. The background risk of 489 in a million is not acceptable, but does not constitute a risk higher than other California urban areas. No air agency has adopted or recommended a threshold this low even for areas with cancer risks that are triple that estimated for the project. The existing sources near the project although important contribute a risk of only 23.9 in a million compared to the background risk of 489 in a million. The nearby sources are subject to regulations that will reduce their impact over time. The regulations in place to reduce the TAC impacts will take time to reduce the cumulative impact to less than 100 in a million, but sufficient progress is being made to eliminate a 1 in a million threshold from consideration.

## Conclusion

Based on the review of available information regarding TAC thresholds presented here and in the First PRDEIR, a 5 in a million cumulative contribution threshold is reasonable for application to the Visalia Walmart Expansion project. The Cumulative Toxic Threshold Document included in the First PRDEIR contains a thorough discussion of the options considered for use as a cumulative contribution. The review presented herein provides additional information that provides the basis for determining that a 5 in a million cumulative contribution threshold is suitable for the project.

The City's selection of 5 in a million as its cumulative contribution threshold is a policy decision based on the amount of increased cancer risk deemed acceptable after review of the factors described in the First PREIR and throughout this document, including (1) existing, ambient air quality (which has been shown to be steadily improving due to increased air quality regulations); (2) the fact that State Route 198 is located approximately 600 feet from the Project site, which accounts for 55

percent of the total risk to nearby sensitive receptors; and (3) the fact that the Project will involve sources of diesel exhaust, which is the primary source of TAC risk.

Specifically, the expansion Project will result in an additional eight medium-heavy duty and six heavy-heavy duty truck trips to and from the site due to increased delivery of groceries and other new items. These new truck trips and the resulting DPM emissions will account for nearly all of the increased risk of 3.3 in a million that is attributable to the Project. Additionally, as a result of the new delivery truck access route and new truck docking area (which has been relocated because of site constraints along the eastern boundary of the project site), trucks serving the Project would now be located somewhat closer to sensitive receptors.

Considering all factors, it is reasonable to adopt a cumulative contribution threshold of 5 in a million. The 5 in a million cumulative contribution threshold is appropriate in light of the existing, ambient air quality in the San Joaquin Valley and the Visalia region, and in light of regulatory programs that have been adopted to reduce the significant cumulative TAC impact. As new data regarding existing background risk becomes available or if the SJVAPCD adopts a suitable two-step cumulative threshold, the City may consider other cumulative thresholds. In addition, other projects located further away from TAC sources or with different characteristics may warrant the application of a different threshold.