

**APPENDIX A**  
**COMMUNITY HEALTH RISK ASSESSMENT**



***EVERGREEN CIRCLE PROJECT***  
***San Jose, California***

***COMMUNITY HEALTH RISK ASSESSMENT***

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## Introduction

The purpose of this report is to address community health risk impacts associated with the proposed Evergreen Circle development in the southwest quadrant of Capitol Expressway and Quimby Road in San Jose. The project would construct up to 344,000 square feet of retail space and 250 residential units on site. Figure 1 shows the project site and surrounding area. The new residences would be between 1,000 feet and 2,100 feet from the edge of Capitol Expressway. The closest residence to Quimby Road would be about 50 feet. Traffic on Capitol Expressway and Quimby road are sources of toxic air contaminants (TACs) that could adversely affect future residents of the project. There are also several stationary sources of TACs near the project site that could adversely affect future project residents. Potential health impacts to future residents of the project from nearby sources of TAC emissions were evaluated following procedures contained in the Bay Area Air Quality Management District (BAAQMD) *Recommended Methods for Screening and modeling Local Risks and Hazards*<sup>1</sup> to analyze potential community health risk impacts to residents of the project from nearby sources of TAC emissions.

## Setting

The project is located in the City of San Jose, which is in the San Francisco Bay Area Air Basin. The BAAQMD is the regional agency tasked with managing air quality in the region. At the State level, the California Air Resources Board (a part of the California Environmental Protection Agency) oversees regional air district activities and regulates air quality at the State level. The BAAQMD has published CEQA Air Quality Guidelines that are used in this assessment to evaluate air quality impacts of projects.<sup>2</sup>

Toxic air contaminants (TACs) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer). TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, state, and Federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the CARB, diesel exhaust is a complex mixture of gases, vapors and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the state's Proposition 65 or under the Federal Hazardous Air Pollutants programs.

## Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 14, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. The project would include new residences that would be considered sensitive receptors with exposure to air pollutant sources, such as traffic on Capitol Expressway, Quimby Road, and nearby stationary sources.

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<sup>1</sup> BAAQMD, 2012. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May 2012.

<sup>2</sup> Bay Area Air Quality Management District. 2011. BAAQMD CEQA Air Quality Guidelines. May.

## Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA and were posted on BAAQMD's website and included in the Air District's updated CEQA Guidelines (updated May 2011). The significance thresholds identified by BAAQMD and used in this analysis are summarized in Table 1.

BAAQMD's adoption of significance thresholds contained in the 2011 CEQA Air Quality Guidelines was called into question by an order issued March 5, 2012, in California Building Industry Association (CBIA) v. BAAQMD (Alameda Superior Court Case No. RGI0548693). The order required BAAQMD to set aside its approval of the thresholds until it has conducted environmental review under CEQA. The ruling made in the case concerned the environmental impacts of adopting the thresholds and how the thresholds would indirectly affect land use development patterns. In August 2013, the Appellate Court struck down the lower court's order to set aside the thresholds. However, this litigation remains pending as the California Supreme Court recently accepted a portion of CBIA's petition to review the appellate court's decision to uphold BAAQMD's adoption of the thresholds. The specific portion of the argument to be considered is in regard to whether CEQA requires consideration of the effects of the environment on a project (as contrasted to the effects of a proposed project on the environment). Therefore, the significance thresholds contained in the 2011 CEQA Air Quality Guidelines are applied to this project.

**Table 1. Air Quality Significance Thresholds<sup>3</sup>**

Metric	Construction Thresholds	Operational Thresholds
<b>Health Risks and Hazards for Sensitive Receptors and New Sources</b>		
Excess Cancer Risk	10 per one million	
Chronic or Acute Hazard Index	1.0	
Incremental annual average PM <sub>2.5</sub>	0.3 µg/m <sup>3</sup>	
<b>Health Risks and Hazards for Sensitive Receptors (Cumulative from all sources within 1,000 foot zone of influence) and Cumulative Thresholds for New Sources</b>		
Excess Cancer Risk	100 per one million	
Chronic Hazard Index	10.0	
Annual Average PM <sub>2.5</sub>	0.8 µg/m <sup>3</sup>	
Note: PM <sub>2.5</sub> = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less.		

<sup>3</sup> Bay Area Air Quality Management District. 2011. BAAQMD CEQA Air Quality Guidelines. May.

d) Expose sensitive receptors to substantial pollutant concentrations?

d) **Less than Significant Impact.** Operation of the project is not expected to cause any localized emissions that could expose off-site sensitive receptors to unhealthy air pollutant levels.

However, there are existing Toxic Air Contaminants (TACs) emission sources near the project site that could affect new on-site residents and are addressed below.

The project would include new on-site sensitive receptors. Substantial sources of air pollution can adversely affect sensitive receptors proposed as part of new projects. The BAAQMD recommends identifying existing TAC sources within a radius of 1,000 feet from the project site boundary that may impact new receptors. A review of the project area indicates that there are two roadways within 1,000 feet of the site (Capitol Expressway and Quimby Road) that could adversely affect new residences. Based on the BAAQMD's *Stationary Source Screening Analysis Tool*, which uses Google Earth map tools to identify the location of stationary sources and their estimated risk and hazard impacts, there are two stationary sources within 1,000 feet of the project site, a gas station (BAAQMD plant number G4102) and an emergency generator at the Eastridge Mall (BAAQMD plant number 15952). Both of these sources are north of the project site. These sources are shown on Figure 1. Potential health impacts from the two stationary TAC sources within 1,000 feet of the project site boundary are discussed below.

- Source G4102 is an Arco gas station located at 2375 Quimby Road (corner of Quimby Road and Capitol Expressway). The gas station is about 790 feet from the nearest project site boundary, but is about 1,500 feet from the nearest proposed residential site. The BAAQMD screening-level health risk values for this source at the source boundary are a cancer risk of 78.4 in one million, a hazard index (HI) of 0.13, and no PM<sub>2.5</sub>. The potential cancer risk and HI at the nearest project residential location were calculated using BAAQMD's distance multiplier tool for gas stations that adjusts health risk values based on the distance from the source.<sup>4</sup> The maximum distance considered in the adjustment tool is 300 meters or about 1,000 feet. At 1,000 feet from the gas station the cancer risk would be 1.2 in one million and the HI would be 0.002. At the project residences (1,500 feet) the cancer risk and HI would be much lower than the calculated values for 1,000 feet, which are well below the BAAQMD cancer risk and chronic hazard significance thresholds.
- Source 15925 is a diesel fueled emergency generator at an unspecified location in the Eastridge Mall. To conservatively evaluate the impacts from this source, it was assumed that generator was located in the southern-most part of the Mall, as shown on Figure 1. The emergency generator is about 300 feet from the nearest project site boundary and about 350 feet from the nearest proposed residential site. The BAAQMD screening-level health risk values for this source at the source boundary are a cancer risk of 30.9 in one million, a HI of 0.011, and a PM<sub>2.5</sub> concentration of 0.007 µg/m<sup>3</sup>. The potential cancer risk, HI, and PM<sub>2.5</sub> concentration at the nearest project residential location were calculated using BAAQMD's distance multiplier tool for diesel engines. The cancer risk would be 6.2 in one million, the HI would be 0.002, and the PM<sub>2.5</sub> concentration would be 0.0015 µg/m<sup>3</sup>, which are well below the BAAQMD cancer risk, chronic hazard, and PM<sub>2.5</sub> concentration significance thresholds.

Traffic on high volume roadways is a source of TAC emissions that may adversely affect sensitive receptors in close proximity the roadway. For roadways, BAAQMD has published

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<sup>4</sup> BAAQMD provides distance adjustment multipliers for stationary sources: (1) *Distance Adjustment Multiplier Tool for Diesel Internal Combustion (IC) Engines* and (2) *Distance Adjustment Multiplier Tool for Gasoline Dispensing Facilities (GDF)*.

screening tables and data to determine if roadways with traffic volumes of over 10,000 vehicles per day may have a significant effect on a proposed project. The BAAQMD does not consider roads with traffic volumes less than 10,000 vehicles per day to have a significant health impact. In the vicinity of the project site Capitol Expressway has 43,550 average daily trips (ADT) and Quimby Road has 17,300 ADT.

The BAAQMD provides screening tables that indicate predicted community risk impacts that roadways pose<sup>5</sup>. These tables were used to develop screening levels of cancer risk and PM<sub>2.5</sub> concentrations at proposed project residential locations. Note that the screening tables published by BAAQMD indicate that non-cancer hazards from traffic would be well below the BAAQMD thresholds. Therefore, non-cancer hazards from roadway traffic were not analyzed further.

The screening tables were linearly interpolated based on traffic volume and distance to identify the screening cancer risk and PM<sub>2.5</sub> levels. Using a distance of 1,000 feet to the nearest project residence and an ADT level of 45,000 vehicles for Capitol Expressway, the estimated cancer risk would be 1.0 in one million and the PM<sub>2.5</sub> concentration would be 0.033 µg/m<sup>3</sup>. For Quimby Road, using an ADT of 20,000 and a distance to the nearest residence of 50 feet, the estimated cancer risk would be 4.5 in one million and the PM<sub>2.5</sub> concentration would be 0.174 µg/m<sup>3</sup>. The cancer risks and PM<sub>2.5</sub> concentrations at the nearest residences from traffic on Capitol Expressway and Quimby Road would be well below the BAAQMD significance thresholds for increased cancer risk and PM<sub>2.5</sub> exposure.

The individual and cumulative health impacts from TAC sources in the vicinity of the proposed project are summarized below in Table 1. As shown in Table 1, the individual source and cumulative health risk impacts for the proposed project would be below the significance thresholds identified by BAAQMD for increased cancer risk, hazard impacts, and annual PM<sub>2.5</sub> concentrations.

The results of the risk assessment show that the project would have a *less than significant impact* with respect to community risk to future residents of the proposed project during project operation since single-source and cumulative cancer risk, annual PM<sub>2.5</sub> concentration, and hazard index would all be less than the BAAQMD significance thresholds.

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<sup>5</sup> BAAQMD Roadway Analysis Tables can be accessed from BAAQMD's website at <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>

**Table 1. Community Risk Impacts from Single and Cumulative Sources**

<b>Source</b>	<b>Maximum Cancer Risk (per million)</b>	<b>Maximum Hazard Index</b>	<b>Maximum Annual PM<sub>2.5</sub> Concentration (µg/m<sup>3</sup>)</b>
Capitol Expressway	1.0	<0.01	0.033
Quimby Road	4.5	<0.01	0.174
BAAQMD Source G4102 – Arco gas station	<1.2	<0.01	---
BAAQMD Source 15952 – emergency generator	6.2	<0.01	0.002
Maximum Single Source	6.2	<0.01	0.174
<b><i>BAAQMD Threshold - Single Source</i></b>	<b><i>10.0</i></b>	<b><i>1.0</i></b>	<b><i>0.3</i></b>
Cumulative Sources	<12.9	<0.04	0.21
<b><i>BAAQMD Threshold – Cumulative Sources</i></b>	<b><i>100</i></b>	<b><i>10.0</i></b>	<b><i>0.8</i></b>
<b><i>Significant</i></b>	<b><i>No</i></b>	<b><i>No</i></b>	<b><i>No</i></b>

Figure 1. Project Site and Locations of Local TAC Emission Sources



