Appendix A: Health Risk and Assessment

CATALINA RESIDENTIAL II DEVELOPMENT HEALTH RISK ASSESSMENT

Santa Clara, CA

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Prepared for:

Amy Wang
David J. Powers & Associates, Inc.
1871 The Alameda, Suite 200
San José, CA 95126

Prepared by:

Mimi McNamara
James A. Reyff
& Bill Popenuck

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
429 East Cotati Avenue
Cotati, CA 94931
(707) 794-0400

I&R Project#: 18-203

Introduction

The purpose of this report is to address the community health risk impacts for the Catalina II residential project at located at 1483 El Camino Real in Santa Clara, California. The air quality impacts would be associated with demolition of the existing uses at the site, construction of the new buildings and infrastructure, and operation of the project.

This project would involve construction, which would be the primary source of toxic air contaminant (TAC) and fine particulate matter ($PM_{2.5}$) emissions that could lead to community risk impacts, or in other words, increase health risks at sensitive receptors. Potential construction health risk impact to nearby sensitive receptors was evaluated by predicting construction period emissions and using dispersion modeling to predict concentrations at existing sensitive receptors near the project. The impact of existing TAC sources (e.g., El Camino Real traffic) on the proposed residences was evaluated. This analysis addresses those issues following the guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

Project Description

The project would demolish the existing auto-oriented commercial buildings and an unoccupied single-family residence and construct 39 townhomes on the 1.7-acre site. The proposed residential buildings would be three stories tall and all units would include a two-car garage. There would also be seven outdoor guest vehicle parking spaces located along the western boundary of the site.

Setting

The project is located in Santa Clara County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$).

Toxic Air Contaminants

Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants. 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 [DPM] 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 California Air Resources Board (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

[1] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017.

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.

Regulatory Agencies

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a new regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles.[2] The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle.

The BAAQMD is the regional agency tasked with managing air quality in the region. At the State level, the CARB (a part of the California Environmental Protection Agency [EPA]) oversees regional air district activities and regulates air quality at the State level. The BAAQMD has published California Environmental Quality Act (CEQA) Air Quality Guidelines that are used in this assessment to evaluate air quality impacts of projects.[3] The detailed community risk modeling methodology used in this assessment is contained in *Attachment 1*.

Santa Clara General Plan

The 2010-2035 General Plan includes the following policies related to air quality TACs and odors:

5.10.2-P3	Encourage implementation of technological advances that minimize public health hazards and reduce the generation of air pollutants.
5.10.2-P6	Require "Best Management Practices" for construction dust abatement.
5.10.5-P34	Implement minimum setbacks of 500 feet from roadways with average daily trips of 100,000 or more and 100 feet from railroad tracks for new residential or other uses with sensitive receptors, unless a project-specific study identifies measures, such as site design, tiered landscaping, air filtration systems, and window design, to reduce exposure, demonstrating that the potential risks can be reduced to acceptable levels.

[2] Available online: http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm. Accessed: November 21, 2014.
[3] Bay Area Air Quality Management District. 2017. *BAAQMD CEQA Air Quality Guidelines*. May.

5.10.5-P35 Establish minimum buffers between odor sources and new residential or other uses with sensitive receptors, consistent with BAAQMD guidelines, unless a project-specific study demonstrates that these risks can be reduced to acceptable levels.

The General Plan included Prerequisite Goals and Policies that relate to air quality. Some of these policies addressed significant impacts identified in the Draft Environmental Impact Report for the General Plan. The following policy related to air quality was included in the General Plan:

5.1.1-P24 Prior to the implementation of Phase III, the City will include a community Risk Reduction Plan ("CRRP") for acceptable Toxic Air Contaminant ("TAC") concentrations, consistent with the Bay Area Air Quality Management District ("BAAQMD") CEQA Guidelines, including risk and exposure reduction targets, measures to reduce emissions, monitoring procedures, and a public participations process.

Note that the City has not yet developed a CRRP, so health risk assessments are performed for projects that contain sensitive receptors near sources of air pollution or TACs. These include modeling of health risks for individual projects located within the minimum setbacks for roadways and railroads. Mitigation measures such as (but not limited to); site redesign, tiered plantings of trees, air filtration systems, and location of air intakes and design windows to reduce exposure, shall be required to reduce these risks to acceptable levels.

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 16, 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, and elementary schools. This project would introduce new sensitive receptors to the area in the form of residences. Additionally, the closest offsite sensitive receptors to the project site are residences of the Catalina I townhome subdivision adjacent to the eastern project site boundary. There are additional residences at farther distances from the project site.

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA and these significance thresholds were contained in the District's 2011 *CEQA Air Quality Guidelines*. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The thresholds were challenged through a series of court challenges and were mostly upheld. BAAQMD updated the *CEQA Air Quality Guidelines* in 2017 to include the latest significance thresholds that were used in this analysis are summarized in Table 1.

Table 1. Community Health Risk Significance Thresholds

Health Risks and Hazards for Single Sources	
Excess Cancer Risk	>10.0 per one million
Hazard Index	>1.0
Incremental annual $PM_{2.5}$	>0.3 µg/m^3
Health Risks and Hazards for Combined Sources (Cumulative from all sources within 1,000-foot zone of influence)	
Excess Cancer Risk	>100 per one million
Hazard Index	>10.0
Annual Average $PM_{2.5}$	>0.8 µg/m^3
Note: $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less; and GHG = greenhouse gas. *BAAQMD does not have a recommended post-2020 GHG threshold yet.	

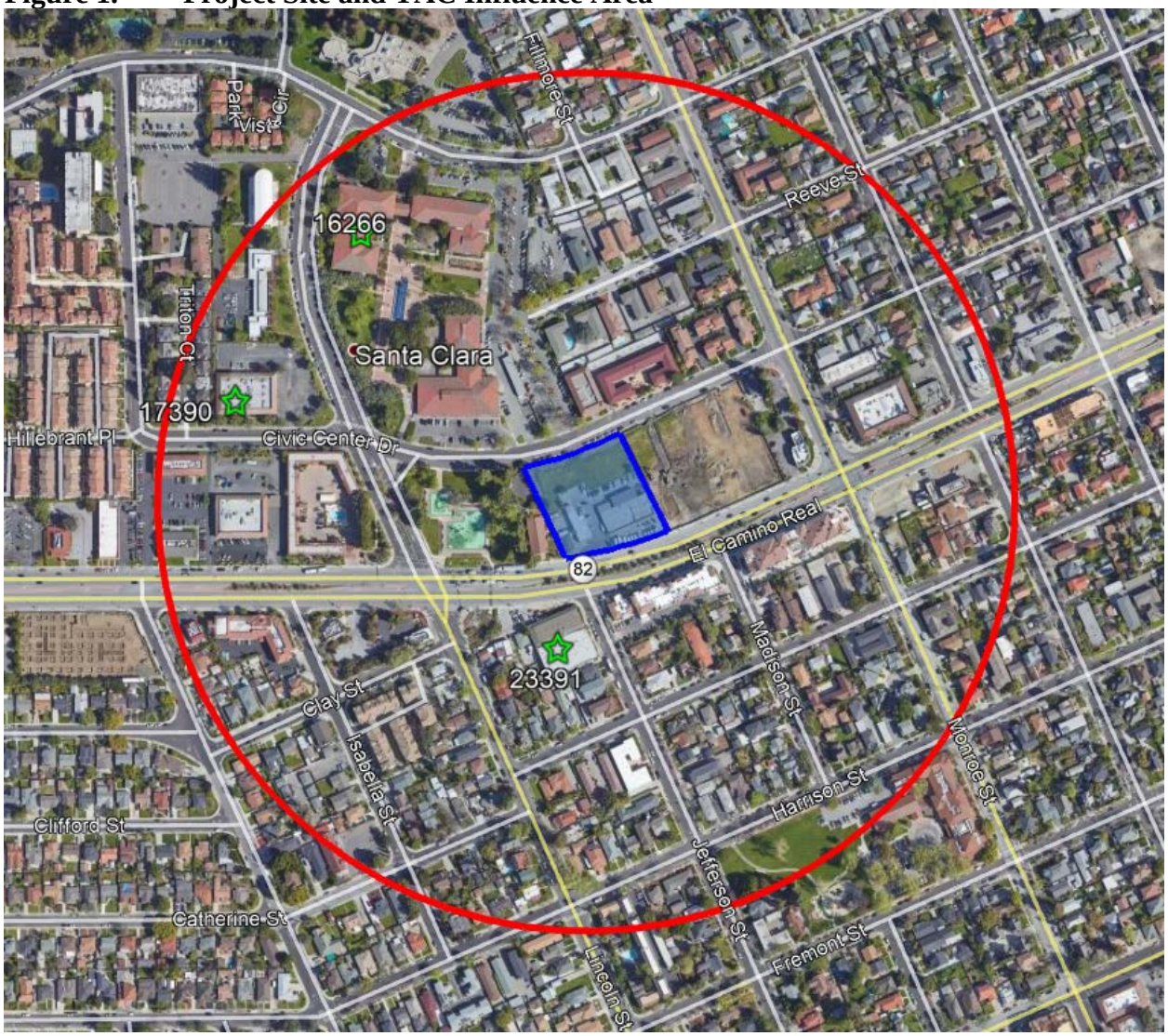
Impact: Expose sensitive receptors to substantial pollutant concentrations?

Project impacts related to increased community risk can occur either by introducing a new sensitive receptor, such as a residential use, in proximity to an existing source of TACs or by introducing a new source of TACs with the potential to adversely affect existing sensitive receptors in the project vicinity. The BAAQMD recommends using a 1,000-foot screening radius around a project site for purposes of identifying community health risk from siting a new sensitive receptor or a new source of TACs. Operation of the project is not expected to cause any localized emissions that could expose sensitive receptors to unhealthy air pollutant levels. No stationary sources of TACs, such as generators, are proposed as part of the project. The project would introduce new sensitive receptors to the area in the form of future residences. There are thresholds that address both the impact of single and cumulative TAC sources upon projects that include new sensitive receptors (see Table 1). Construction activity would generate dust and equipment exhaust on a temporary basis that could affect nearby sensitive receptors.

Operational Community Risk Impacts

Community health risk assessments typically look at all substantial sources of TACs that can affect sensitive receptors that are located within 1,000 feet of a project site. These sources include freeways or highways, busy surface streets, and stationary sources identified by BAAQMD. Traffic on high volume roadways is a source of TAC emissions that may adversely affect sensitive receptors in close proximity to the roadway. For local roadways, BAAQMD considers roadways with traffic volumes of over 10,000 vehicles per day to have a potentially significant impact on a proposed project. A review of the project area indicates that traffic on El Camino Real (SR-82) is the only substantial source of mobile TAC emissions within 1,000 feet of the residential portion of the project site. A review of BAAQMD's Google Earth map tool used to identify stationary sources revealed three sources with the potential to affect the project site. Community risk impacts from these sources upon the project are reported in Table 2. The project site and sources affecting the project (i.e., within 1,000 feet) are shown in Figure 1.

Figure 1. Project Site and TAC Influence Area



El Camino Real (SR- 82) Impacts

Since the BAAQMD screening tools indicated increased cancer risk at the project, dwelling units closest to El Camino Real could exceed the cancer risk single-source thresholds. Therefore, refined modeling was conducted. Refined modeling tends to predict more accurate results, because project-specific information is used in the modeling. This includes roadway orientation with respect to receptors (i.e., where dwelling units would be located with respect to traffic), emission estimates (i.e., based on traffic speeds and traffic mix), and meteorological conditions near the project.

The refined analysis involved predicting traffic emissions for the traffic volume and mix of vehicle types on El Camino Real. These emissions were entered into a dispersion model to predict exposure to TACs. The associated cancer risks were computed based on the BAAQMD modeled exposures. *Attachment 1* includes a description of how community risk impacts, including cancer risk are computed.

A review of the traffic information reported by Caltrans indicates that the section of El Camino Real closest to the project has an average daily traffic (ADT) of 29,000 vehicles, as reported by Caltrans.[4] This includes about 6.4 percent trucks, of which 2.1 percent are considered heavy duty trucks and 4.3 percent are medium duty trucks.[5] The analysis involved the development of DPM and organic TAC emissions for traffic on El Camino Real using the CARB EMFAC2014 emission factor model and the traffic mix on El Camino Real, based on the Caltrans traffic data. DPM emissions are projected to decrease in the future and are reflected in the EMFAC2014 emissions data. CARB regulations require on-road diesel trucks to be retrofitted with particulate matter controls or replaced to meet 2010-or-later engine standards that have much lower DPM and $PM_{2.5}$ emissions. This regulation will substantially reduce these emissions between 2013 and 2023. While new trucks and buses will meet strict federal standards, this measure is intended to accelerate the rate at which the fleet either turns over so there are more cleaner vehicles on the road or retrofitted to meet similar standards. With this regulation, older, more polluting trucks would be removed from the roads sooner.

Emission factors for DPM ($PM_{2.5}$ exhaust from diesel vehicles) were developed for the year 2021 using the calculated mix of cars and trucks on El Camino Real. Default EMFAC2014 vehicle model year distributions for Santa Clara County were used in calculating emissions for 2021. Emissions were based on an average speed of 35 mph, 5 miles below the posted speed limit, for all hours of the day. Average hourly traffic distributions for Santa Clara County roadways were developed using the EMFAC model,[6] which were then applied to the ADT volumes to obtain estimated hourly traffic volumes and emissions for El Camino Real. Year 2021 emissions were conservatively assumed as being representative of future conditions over the time period that cancer risks are evaluated (30 years), since, as discussed above, overall vehicle emissions, and in particular diesel truck emissions will decrease in the future.

Emissions of total organic gases (TOG) were also calculated for 2021 using the EMFAC2014 model. These TOG emissions were then used in the modeling the organic TACs. TOG emissions from exhaust and for running evaporative loses from gasoline vehicles were calculated using EMFAC2014 default model values for Santa Clara County along with the traffic volumes and vehicle mixes for El Camino Real.

$PM_{2.5}$ emissions for vehicles traveling on El Camino Real were calculated using the same basic approach that was used for assessing TAC emissions. All $PM_{2.5}$ emissions from all vehicles were used, rather than just the $PM_{2.5}$ fraction from diesel powered vehicles, because all vehicle types (i.e., gasoline and diesel powered) produce $PM_{2.5}$. Additionally, $PM_{2.5}$ emissions from vehicle tire and brake wear and from re-entrained roadway dust were included in these emissions. The assessment involved, first, calculating $PM_{2.5}$ emission rates from traffic traveling on the roadway. These emissions were calculated using the EMFAC2014 model and traffic volumes and were

[4] California Department of Transportation. 2017a. *2016 Traffic Volumes on the California State Highway System*.
[5] California Department of Transportation. 2017b. *2015 Annual Average Daily Truck Traffic on California State Highways*
[6] The Burden output from EMFAC2007, CARB's previous version of the EMFAC model, was used for this since the current web-based version of EMFAC2011 does not include Burden type output with hour by hour traffic volume information.

calculated in the same manner as discussed for the TAC emissions. $PM_{2.5}$ re-entrained dust emissions from vehicles traffic were calculated using CARB emission calculation procedures.[7] The emission rates used in the analysis are shown in *Attachment 3*.

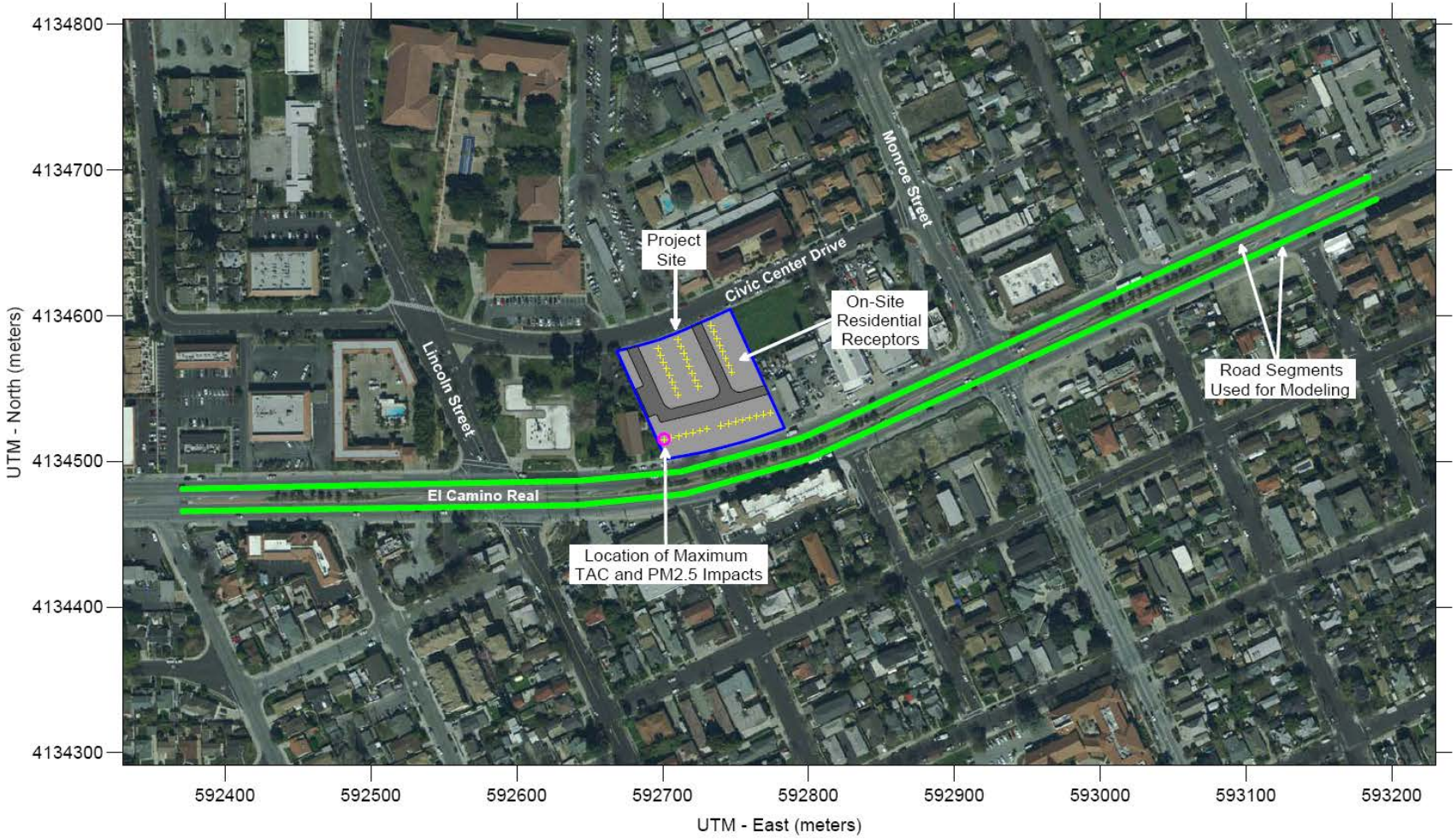
Dispersion modeling of TAC and $PM_{2.5}$ emissions was conducted using the EPA AERMOD model, which is a BAAQMD recommended model for this type of analysis.[8] East and west bound traffic on El Camino Real within about 1,000 feet of the project site were evaluated with the model. A five-year data set of hourly meteorological data (2006-2010) from the San Jose Airport obtained from BAAQMD was used in the modeling. The airport is about one mile east of the project site. Other inputs to the model included road geometry, emission rates, and on-site project receptor locations and heights. Emissions from vehicles traveling on El Camino Real were modeled as line sources comprised of a series adjacent volume sources along each road segment modeled. The modeling included on-site receptors placed within the areas of the new residential units on the first, second and third floor levels of the project. Receptor heights of 1.5 meters (4.9 feet), 4.5 meters (14.8 feet), and 7.6 meters (24.9 feet) were used to represent the breathing heights of residents on the first, second, and third floor receptors, respectively. The closest receptors to El Camino Real, and most affected, are those at the first floor that were represented with a receptor height of 1.5 meters. Figure 2 shows the roadway segments modeled and the project residential receptor locations used in the modeling.

The maximum increased cancer risk was computed as 3.8 in one million on the first floor, 3.0 in one million for the second floor, and 1.7 in one million for the third floor. The first-floor maximum cancer risk was modeled at a receptor in the southwest corner of the residential area closest to El Camino Real, as shown on Figure 2.

The maximum annual $PM_{2.5}$ concentration would be 0.3 $\mu g/m^3$ on the first floor, 0.2 $\mu g/m^3$ on the second floor and 0.1 $\mu g/m^3$ on the third-floor level. The maximum concentration of 0.3 $\mu g/m^3$ would be less than the significance threshold for $PM_{2.5}$. The modeling results and health risk calculations for the receptor with the maximum cancer risk from El Camino Real traffic are also provided in *Attachment 3*.

[7] CARB, 2014. *Miscellaneous Process Methodology 7.9, Entrained Road Travel, Paved Road Dust*. Revised and updated, April 2014.
[8] BAAQMD, 2012. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May 2012.

Figure 2. Project Site, On-Site Sensitive Receptors, Roadway Segments Modeled, and Receptor with Maximum Cancer Risk and Annual $PM_{2.5}$ Concentration



Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Stationary Source Risk & Hazard Analysis Tool*. This mapping tool uses Google Earth and identified the location of four stationary sources and their estimated risk and hazard impacts. A Stationary Source Information Form (SSIF) containing the identified sources was prepared and submitted to BAAQMD. They provided updated risk levels, emissions and adjustments to account for new OEHHA guidance.[9] The risk values were then adjusted with the appropriate distance multiplier values provided by BAAQMD or the emissions information was used in refined modeling.

Three stationary sources were identified (Plants #16266, #17390, and #23391) with two being generators and one being an auto-body shop. The emissions data for these stationary sources were provided by BAAQMD and adjusted for distance based on BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines.*

Note that Plant #23391 is a spray booth, so its risk values were not adjusted for distance. However, the BAAQMD *Risk and Hazard Emissions Screening Calculator (Beta Version)* was used with the 2017 daily emissions information to calculate the risk impact from this plant. Concentrations and community risk impacts from these sources are reported in Table 2.

Cumulative Community Health Risk at Project Site

Cumulative TAC impacts are assessed by predicting the combined community risk impacts to the project and nearby sources. Table 2 reports the combination of impacts from all sources within 1,000 feet at the project site. As shown in Table 2, community risk impacts to the project site would not exceed the single-source and cumulative source thresholds, and therefore the impact would be less-than-significant. *Attachment 4* includes the screening community risk calculations from sources affecting the project and MEI.

Table 2. Impacts from Combined TAC Sources at Project Site

Source	Maximum Cancer Risk (per million)	Maximum Annual $PM_{2.5}$ ($\mu g/m^3$)	Maximum Hazard Index
El Camino Real SR-82 at 40 feet	3.8	0.3	<0.01
Plant #16266 (Diesel Generator) at 680 feet	1.3	<0.01	<0.01
Plant #17390 (Diesel Generator) at 700 feet	0.3	<0.01	<0.01
Plant #23391(Auto Body Shop)	-	-	<0.01
BAAQMD Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Significant?	*No*	*No*	*No*
Cumulative Total	5.4	0.32	0.04
BAAQMD Cumulative Source Threshold	***>100***	***>0.8***	***>10.0***
Significant?	*No*	*No*	*No*

[9] Correspondence with Areana Flores, BAAQMD, October 16, 2018.

Construction Community Health Risk Impacts

Project Construction Activity

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust air pollutant emissions would not be considered to contribute substantially to existing or projected air quality violations. Construction exhaust emissions may still pose community risks for sensitive receptors such as nearby residents. The primary community risk impact issues associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. Diesel exhaust poses both a potential health and nuisance impact to nearby receptors. A community risk assessment of the project construction activities was conducted that evaluated potential health effects of sensitive receptors at these nearby residences from construction emissions of DPM and $PM_{2.5}$.[10] The closest sensitive receptors to the project site are existing residences close to the southern boundary of the project site. There are other residences at further distances to the north and west of the project site (see Figure 2). Emissions and dispersion modeling was conducted to predict the off-site DPM concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

Construction period emissions

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to predict annual emissions for construction. CalEEMod provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic.

A construction build-out scenario, including equipment list, was based on information provided by the project applicant. The construction schedule was based on CalEEMod defaults. The proposed project land uses were input into CalEEMod, which included: 39 dwelling units entered as "Condo/Townhouses" and 7 spaces entered as "Parking Lot" on a 1.7-acre site. Additional inputs entered into the model included 1,500 tons of concrete/pavement hauled during demolition and 18 asphalt truck deliveries during paving. Temporary line power is planned on-site and, therefore, no generators were assumed to be used. Cranes are also assumed to be electric.

The construction schedule assumes that the project would be built out over a period of approximately 14 months, beginning in January 2019[11]. Based on the applicant provided construction schedule and equipment usage assumptions, there were an estimated 333 construction workdays.

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include

[10] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

[11] The January 2019 start date was the default used for this analysis. Additional information provided by the project applicant shows that the project construction could start later in July 2019. However, the overall estimated construction workdays would be similar, so the later start date does not affect the community health risk analysis.

disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less than significant if best management practices are implemented to reduce these emissions. *Mitigation Measure 1 would implement BAAQMD-recommended best management practices and is discussed further below*.

Construction period emissions were computed using CalEEMod along with projected construction activity, as described above. The CalEEMod model provided total construction period PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and exhaust emissions from on-road vehicles (haul trucks, vendor trucks, and worker vehicles) of 0.0384 tons (77 pounds) over the construction period. A trip length of one-half mile was used to represent vehicle travel while at or near the construction site. For modeling purposes, it was assumed that these emissions from on-road vehicles would occur at the construction site. Fugitive dust $PM_{2.5}$ emissions were also computed and included in this analysis. The model predicts emissions of 0.01234 tons (25 pounds) of fugitive $PM_{2.5}$ over the construction period.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and $PM_{2.5}$ concentrations at sensitive receptors (residences) in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[12] For each year of construction the AERMOD modeling utilized two area sources to represent the on-site construction emissions, one for exhaust emissions and one for fugitive dust emissions. To represent the construction equipment exhaust emissions, an emission release height of 6 meters (19.7 feet) was used for the area source. The elevated source height reflects the height of the equipment exhaust pipes plus an additional distance for the height of the exhaust plume above the exhaust pipes to account for plume rise of the exhaust gases. For modeling fugitive $PM_{2.5}$ emissions, a near-ground level release height of 2 meters (6.6 feet) was used for the area source. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources. Construction emissions were modeled as occurring daily between 7 a.m. to 4 p.m., when the majority of construction activity would occur.

The modeling used a 5-year meteorological data set (2006-2010) from the San Jose Airport prepared for use with the AERMOD model by the BAAQMD. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2019-2020 period were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptor locations. Receptor heights of 1.5 meters (4.9 feet) and 4.5 meters (14.7 feet) were used to represent the breathing heights of residents in nearby single-family homes and for residences on the second-floor level of buildings with first floor retail use or apartments. Note that it was assumed that the Catalina I residential development would be operational during the construction of Catalina II, so sensitive receptors would be living on the parcel adjacent to the project site.

[12] Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May.

The maximum-modeled annual DPM and $PM_{2.5}$ concentrations, which includes both the DPM and fugitive $PM_{2.5}$ concentrations, were identified at nearby sensitive receptors as shown in Figure 3 for the maximally exposed individuals (MEIs). Using the maximum annual modeled DPM concentrations, the maximum increased cancer risks were calculated using BAAQMD recommended methods and exposure parameters described in *Attachment 1*. Non-cancer health hazards and maximum $PM_{2.5}$ concentrations were also calculated and identified.

Results of this assessment indicated that construction MEI would be located at the second-floor (4.5 meters) of a townhome in the Catalina I residential development, which is adjacent to the eastern project site boundary. The maximum excess residential cancer risks would be greater than the BAAQMD significance threshold of 10 in one million. Table 3 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and health hazard indexes for project related construction activities affecting the residential MEI. *Attachment 5* to this report includes the emission calculations used for the construction area source modeling and the cancer risk calculations.

Figure 3. Project Construction Site and Locations of Off-Site Sensitive Receptors and Maximum TAC and $PM_{2.5}$ Impacts

Summary of Construction Impacts

Table 3 reports both the project and cumulative community risk impacts. The project would have a *significant* impact with respect to community risk caused by project construction activities, since the maximum cancer risk is above the single-source thresholds of 10.0 per million for cancer risk. As shown in Table 3, the combined annual cancer risk, $PM_{2.5}$ concentrations and Hazard risk values, which includes unmitigated and mitigated, would not exceed the cumulative threshold. *Mitigation Measures AQ-1 and AQ-2 would reduce this impact to a level of less-than-significant.*

Table 3. Impacts from Combined TAC Sources at Construction MEI

Source		Maximum Cancer Risk (per million)	Maximum Annual $PM_{2.5}$ ($\mu g/m^3$)	Maximum Hazard Index
Project Construction	Unmitigated	**29.3**	0.23	0.04
	Mitigated	3.2	0.03	<0.01
BAAQMD Single-Source Threshold		***>10.0***	***>0.3***	***>1.0***
	Significant?			
	Unmitigated	***Yes***	*No*	***No***
	Mitigated	*No*	*No*	***No***
El Camino Real SR-82 at 40 feet		8.3	0.3	<0.01
Plant #16266 (Diesel Generator) at 1,000 feet		0.6	<0.01	<0.01
Plant #17390 (Diesel Generator) at 1,000 feet		0.2	<0.01	<0.01
Plant #23391 (Auto Body Shop)		-	-	<0.01
	Cumulative Total			
	Unmitigated	38.4	0.55	0.08
	Mitigated	12.3	0.35	0.05
	BAAQMD Cumulative Source Threshold	***>100***	***>0.8***	***>10.0***
	Significant?			
	Unmitigated	*No*	*No*	*No*
	Mitigated	*No*	*No*	*No*

Mitigation Measure 1: **Include basic measures to control dust and exhaust during construction.**

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less than significant level. The contractor shall implement the following best management practices that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure AQ-2: **Selection of equipment during construction to minimize emissions. Such equipment selection would include the following:**

The project shall develop a plan demonstrating that the off-road equipment used on-site to construct the project would achieve a fleet-wide average 66-percent reduction in DPM exhaust emissions or greater. One feasible plan to achieve this reduction would include the following:

1. All diesel-powered off-road equipment, larger than 25 horsepower, operating on the site for more than two days continuously shall, at a minimum, meet U.S. EPA NOx and particulate matter emissions standards for Tier 2 engines and this equipment shall include CARB-certified Level 3 Diesel Particulate Filters[13] or equivalent. Equipment that meets U.S. EPA Tier 3 interim standards with Level 3 Diesel Particulate Filters or use of equipment that is electrically powered or uses non-diesel fuels would meet this requirement.

Effectiveness of Mitigation AQ-1 & AQ-2

The measures included above would be consistent with BAAQMD-recommended basic control measures for reducing fugitive particulate matter that are contained in the BAAQMD CEQA Air Quality Guidelines. With mitigation, the computed maximum increased lifetime residential

[13] See http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm

cancer risk from construction, assuming infant exposure, would be 3.2 in one million or less, the maximum annual $PM_{2.5}$ concentration would be 0.03 $\mu g/m^3$, and the Hazard Index would be <0.01. As a result, impacts would be reduced to *less than significant* with respect to community risk caused by construction activities.

Supplemental Analysis: Construction Health Risks at Offsite Receptors

Project Construction from Catalina I and II Residential Development

The construction community risk assessment assumes that the Catalina I residential project would be constructed and occupied. If this is not the case, then construction impacts from the proposed project would occur at a different location that is shown in Figure 4. Impacts from construction of the proposed project would be less at this different location, and they are described in Table 4. The impacts from the project construction activities would still be significant and Mitigation Measures AQ-1 and AQ-2 would still be required. Mitigation Measure AQ-2 would only require a 55-peercent reduction in diesel exhaust emissions as opposed to 66 percent of the impacts occur at the Catalina I site.

The Catalina I project cumulative construction impacts are included in Table 4. This was assessed by reporting both the unmitigated and mitigated construction impacts for that project[14]. These are the impacts that would occur at the MEI identified for that project and are added to the results for the MEI for this proposed project (i.e., a worst-case analysis). The cumulative unmitigated and mitigated total with the addition of the Catalina I construction impacts would not exceed the cumulative-thresholds for cancer risk, $PM_{2.5}$ concentrations and Hazard risk values. *Mitigation AQ-2 as described above would reduce the project construction impact to less-than-significant.*

[14] Illingworth & Rodkin, Inc. 2017. *Catalina Residential Development TAC and Odor Assessment – Santa Clara, California*. November 6.

Figure 4. Project Construction Site and Locations of Off-Site Sensitive Receptors and Maximum TAC and $PM_{2.5}$ Impacts

Table 4. Impacts from Combined TAC Sources at Offsite Construction MEI

Source	Maximum Cancer Risk (per million)	Maximum Annual $PM_{2.5}$ ($\mu g/m^3$)	Maximum Hazard Index
Catalina II Project Construction			
Unmitigated	**20.5**	0.17	0.03
Mitigated	2.2	0.03	0.01
BAAQMD Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Significant?			
Unmitigated	***Yes***	*No*	*No*
Mitigated	*No*	*No*	*No*
El Camino Real SR-82 at 40 feet	8.3	0.3	<0.01
Plant #16266 (Diesel Generator) at 1,000 feet	0.6	<0.01	<0.01
Plant #17390 (Diesel Generator) at 1,000 feet	0.2	<0.01	<0.01
Plant #23391 (Auto Body Shop)	-	-	<0.01
Catalina I Residential Development Construction			
Unmitigated	12.8	0.09	0.01
Mitigated	8.0	0.04	<0.01
Cumulative Total			
Unmitigated	42.4	0.58	0.08
Mitigated	19.3	0.39	<0.06
BAAQMD Cumulative Source Threshold	***>100***	***>0.8***	***>10.0***
Significant?			
Unmitigated	*No*	*No*	*No*
Mitigated	*No*	*No*	*N0*

Supporting Documentation

Attachment 1 is the methodology used to compute community risk impacts, including the methods to compute lifetime cancer risk from exposure to project emissions.

Attachment 2 includes the CalEEMod output for project construction TAC emissions and GHG emissions. Also included are any modeling assumptions.

Attachment 3 includes the emission and health risk assessment calculations for El Camino Real (SR-82). AERMOD dispersion modeling files for this assessment, which are quite voluminous, are available upon request and would be provided in digital format.

Attachment 4 includes the screening community risk calculations from sources affecting the project site and construction MEI.

Attachment 5 is the construction health risk assessment. AERMOD dispersion modeling files for this assessment, which are quite voluminous, are available upon request and would be provided in digital format.

Attachment 1: Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[15] These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.[16] This HRA used the recent 2015 OEHHA risk assessment guidelines and CARB guidance. The BAAQMD has adopted recommended procedures for applying the newest OEHHA guidelines as part of Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.[17] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

Potential increased cancer risk from inhalation of TACs are calculated based on the TAC concentration over the period of exposure, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency of exposure, and the exposure duration. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location or other sensitive receptor location.

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day). As recommended by the BAAQMD, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of 30 years for sources with long-term emissions (e.g., roadways).

Under previous OEHHA and BAAQMD HRA guidance, residential receptors are assumed to be at their home 24 hours a day, or 100 percent of the time. In the 2015 Risk Assessment Guidance, OEHHA includes adjustments to exposure duration to account for the fraction of time at home (FAH), which can be less than 100 percent of the time, based on updated population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to less than 16 years, and 0.73 for ages 16 to 70 years. Use of the FAH factors is allowed by the BAAQMD if there are no schools in the project vicinity that would have a cancer risk of one in a million or greater assuming 100 percent exposure (FAH = 1.0).

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[15] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.

[16] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.

[17] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

Functionally, cancer risk is calculated using the following parameters and formulas:

Cancer Risk (per million) = $CPF \times Inhalation\ Dose \times ASF \times ED/AT \times FAH \times 10^6$

Where:

CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = $C_{air} \times DBR \times A \times (EF/365) \times 10^{-6}$

Where:

C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

The health risk parameters used in this evaluation are summarized as follows:

Parameter	*Exposure Type* →	Infant		Child		Adult
	Age Range →	3rd Trimester	0<2	2 < 9	2 < 16	16 - 30
DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day)*		361	1,090	631	572	261
Inhalation Absorption Factor		1	1	1	1	1
Averaging Time (years)		70	70	70	70	70
Exposure Duration (years)		0.25	2	14	14	14
Exposure Frequency (days/year)		350	350	350	350	350
Age Sensitivity Factor		10	10	3	3	1
Fraction of Time at Home		0.85-1.0	0.85-1.0	0.72-1.0	0.72-1.0	0.73

* 95th percentile breathing rates for 3rd trimester and infants and 80th percentile for children and adults.

Non-Cancer Hazards

Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total HI is calculated as the sum of the HIs for each TAC evaluated and the total HI is compared to the BAAQMD significance thresholds to determine whether a significant non-cancer health impact from a project would occur.

Typically, for residential projects located near roadways with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is diesel particulate matter (DPM). For DPM, the chronic inhalation REL is 5 micrograms per cubic meter ($\mu g/m^3$).

Annual $PM_{2.5}$ Concentrations

While not a TAC, fine particulate matter ($PM_{2.5}$) has been identified by the BAAQMD as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under the California Environmental Quality Act (CEQA). The thresholds of significance for $PM_{2.5}$ (project level and cumulative) are in terms of an increase in the annual average concentration. When considering $PM_{2.5}$ impacts, the contribution from all sources of $PM_{2.5}$ emissions should be included. For projects with potential impacts from nearby local roadways, the $PM_{2.5}$ impacts should include those from vehicle exhaust emissions, $PM_{2.5}$ generated from vehicle tire and brake wear, and fugitive emissions from re-suspended dust on the roads.

Attachment 2: CalEEMod Modeling Output

Project Name: Catalina II

Project Size 39 Dwelling Units | 1.7 total project acres disturbed

_____ s.f. residential | _____ s.f. retail

_____ s.f. office/commercial | _____ s.f. other, specify:

_____ s.f. other, specify:

_____ s.f. parking garage | _____ spaces

_____ s.f. parking lot | _____ spaces

Construction Hours am to pm

Complete ALL Portions in Yellow

Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	Comments
	Demolition	**Start Date:**	e.g., 9/1/2016	**Total phase:**	**10**		**Overall Import/Export Volumes**
		End Date:					
1	Concrete/Industrial Saws	81	0.73	1 day @ 8 hours	1	1	**Demolition Volume**
2	Excavators	162	0.38	10 days @ 8hours	10	8	Square footage of buildings to be demolished
	Rubber-Tired Dozers	255	0.4	NA			(*or* total tons to be hauled)
2	Tractors/Loaders/Backhoes	97	0.37	5 days@8 hours	5	4	**27,000** square feet *or*
							1000 tonsConcrete Hauling volume (tons)
	Site Preperation	**Start Date:**		**Total phase:**	**5**		Any pavement demolished and hauled? **500** Tons asphalt
		End Date:					**Soil Hauling Volume**
	Graders	174	0.41	NA			
1	Rubber Tired Dozers	255	0.4	5 days@8hours	5	8	Export volume = **0** cubic yards?
2	Tractors/Loaders/Backhoes	97	0.37	5days@8hours	5	8	Import soil 0 cubic yards
	Grading / Excavation	**Start Date:**		**Total phase:**	**17**		
		End Date:					**Soil Hauling Volume**
1	Scrapers	**361**	**0.48**	**7days@8hours**		3	
	Excavators	162	0.38	NA			Export volume = **0** cubic yards?
1	Grader Blade	174	0.41	14 days @ 8 hours		7	Import soil 0 cubic yards
	Rubber Tired Dozers	255	0.4	NA			
2	Tractors/Loaders/Backhoes	97	0.37	4 days@ 8 hours		2	
	Compactor	100		10 days@8hours			
	Trenching	**Start Date:**		**Total phase:**	**30**		
		End Date:					
2	Tractor/Loader/Backhoe	97	0.37	30 days@8 hours		8	
2	Excavators	162	0.38	15Days		4	
	Other Equipment?						
	Building - Exterior	**Start Date:**		**Total phase:**	**180**		**Cement Trucks? _300_ Total Round-Trips**
		End Date:					
1	Cranes	226	0.29	4 days@8hours		1	Electric? (Y/N) YES Otherwise assumed diesel
2	Forklifts	89	0.2	120 days @ 8 hours		5	Liquid Propane (LPG)? (Y/N) No Otherwise Assumed diesel
	Generator Sets	84	0.74	NA temp power pole			Or temporary line power? (Y/N) yes
2	Tractors/Loaders/Backhoes	97	0.37	60 days @8 hours		3	otherwise, assume diesel generator
	Welders	46	0.45	NA			
	Other Equipment?					0	
	Building - Interior/Architectural Coating	**Start Date:**		**Total phase:**	**90**		
		End Date:					
	Air Compressors electric only	78	0.48	NA			
1	Aerial Lift	62	0.31	6 days@8 hours		1	
	Other Equipment?						
	Paving	**Start Date:**		**Total phase:**	**1**		
		Start Date:					
	Cement and Mortar Mixers	9	0.56	NA			
	Pavers	125	0.42			0	**Asphalt? 245 cubic yards or 18 round trips?**
1	Paving Equipment	130	0.36	1day@8 hours		8	
1	Rollers	80	0.38	1 day@8hours		8	
1	Tractors/Loaders/Backhoes	97	0.37	1day@8 hours		8	
	Other Equipment?						

Equipment listed in this sheet is to provide an example of inputs

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horepower or load factor, as appropriate

Typical Equipment Type & Load Factors

OFFROAD Equipment Type	HP	Load Factor
Aerial Lifts	62	0.31
Air Compressors	78	0.48
Bore/Drill Rigs	205	0.5
Cement and Mortar Mixers	9	0.56
Concrete/Industrial Saws	81	0.73
Cranes	226	0.29
Crawler Tractors	208	0.43
Crushing/Proc. Equipment	85	0.78
Dumpers/Tenders	16	0.38
Excavators	162	0.38
Forklifts	89	0.2
Generator Sets	84	0.74
Graders	174	0.41
Off-Highway Tractors	122	0.44
Off-Highway Trucks	400	0.38
Other Construction Equipment	171	0.42
Other General Industrial Equipment	150	0.34
Other Material Handling Equipment	167	0.4
Pavers	125	0.42
Paving Equipment	130	0.36
Plate Compactors	8	0.43
Pressure Washers	13	0.2
Pumps	84	0.74
Rollers	80	0.38
Rough Terrain Forklifts	100	0.4
Rubber Tired Dozers	255	0.4
Rubber Tired Loaders	199	0.36
Scrapers	361	0.48
Signal Boards	6	0.82
Skid Steer Loaders	64	0.37
Surfacing Equipment	253	0.3
Sweepers/Scrubbers	64	0.46
Tractors/Loaders/Backhoes	97	0.37
Trenchers	80	0.5
Welders	46	0.45

*assumed 12" section @ 145 lb/cubic foot

*assumed 4" of HMA

Typical Equipment Type & Load Factors		
OFFROAD Equipment Type	**Horsepower**	**Load Factor**
Aerial Lifts	62	0.31
Air Compressors	78	0.48
Bore/Drill Rigs	205	0.5
Cement and Mortar Mixers	9	0.56
Concrete/Industrial Saws	81	0.73
Cranes	226	0.29
Crawler Tractors	208	0.43
Crushing/Proc. Equipment	85	0.78
Dumpers/Tenders	16	0.38
Excavators	162	0.38
Forklifts	89	0.2
Generator Sets	84	0.74
Graders	174	0.41
Off-Highway Tractors	122	0.44
Off-Highway Trucks	400	0.38
Other Construction Equipment	171	0.42
Other General Industrial Equipment	150	0.34
Other Material Handling Equipment	167	0.4
Pavers	125	0.42
Paving Equipment	130	0.36
Plate Compactors	8	0.43
Pressure Washers	13	0.2
Pumps	84	0.74
Rollers	80	0.38
Rough Terrain Forklifts	100	0.4
Rubber Tired Dozers	255	0.4
Rubber Tired Loaders	199	0.36
Scrapers	361	0.48
Signal Boards	6	0.82
Skid Steer Loaders	64	0.37
Surfacing Equipment	253	0.3
Sweepers/Scrubbers	64	0.46
Tractors/Loaders/Backhoes	97	0.37
Trenchers	80	0.5
Welders	46	0.45

Catalina II, TAC - Santa Clara County, Annual

Catalina II, TAC Electric Crane Model

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	7.00	Space	0.00	2,800.00	0
Condo/Townhouse	39.00	Dwelling Unit	1.70	39,000.00	112

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2020 rate 290

Land Use - Project Land use: 39 Townhomes on a 1.7 acre lot

Construction Phase - Applicant construction schedule

Off-road Equipment - Applicant Equipment Usage

Off-road Equipment - Applicant Equipment Usage

Off-road Equipment - Applicant Equipment Usage

Off-road Equipment - Applicant Equipment Usage

Off-road Equipment - Applicant Equipment Usage

Off-road Equipment - Applicant Equipment Usage

Off-road Equipment - Default trenching equipment

Trips and VMT - Construction Cement Trips: 600 OW; Paving Asphalt: 36 OW, TAC Trip length 1 mile

Demolition - 1500 tons of demo

Grading - no soil hauling

Construction Off-road Equipment Mitigation - Cranes eletric use for unmitigated DPM/FUG PM2.5

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstructionPhase	NumDays	10.00	90.00
tblConstructionPhase	NumDays	200.00	180.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	4.00	17.00
tblConstructionPhase	NumDays	10.00	1.00
tblConstructionPhase	NumDays	2.00	5.00
tblLandUse	LotAcreage	0.06	0.00
tblLandUse	LotAcreage	2.44	1.70
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	6.00	1.00
tblOffRoadEquipment	UsageHours	6.00	5.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	3.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	2.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripNumber	0.00	600.00
tblTripsAndVMT	HaulingTripNumber	0.00	36.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00

tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00

2.0 Emissions Summary

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					
2019	0.1488	0.7576	0.5946	9.6000e-004	0.0414	0.0412	0.0826	0.0123	0.0379	0.0502	0.0000	86.7896	86.7896	0.0250	0.0000	87.4138
2020	0.1991	4.0500e-003	5.9400e-003	1.0000e-005	1.6000e-004	6.0000e-005	2.2000e-004	4.0000e-005	6.0000e-005	1.0000e-004	0.0000	0.9267	0.9267	2.2000e-004	0.0000	0.9322
Maximum	**0.1991**	**0.7576**	**0.5946**	**9.6000e-004**	**0.0414**	**0.0412**	**0.0826**	**0.0123**	**0.0379**	**0.0502**	**0.0000**	**86.7896**	**86.7896**	**0.0250**	**0.0000**	**87.4138**

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					
2019	0.1431	0.6900	0.5688	9.6000e-004	0.0203	0.0383	0.0586	3.4000e-003	0.0353	0.0387	0.0000	80.9599	80.9599	0.0231	0.0000	81.5379
2020	0.1991	4.0500e-003	5.9400e-003	1.0000e-005	1.6000e-004	6.0000e-005	2.2000e-004	4.0000e-005	6.0000e-005	1.0000e-004	0.0000	0.9267	0.9267	2.2000e-004	0.0000	0.9322
Maximum	**0.1991**	**0.6900**	**0.5688**	**9.6000e-004**	**0.0203**	**0.0383**	**0.0586**	**3.4000e-003**	**0.0353**	**0.0387**	**0.0000**	**80.9599**	**80.9599**	**0.0231**	**0.0000**	**81.5379**

	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	**1.63**	**8.87**	**4.30**	**0.00**	**50.84**	**6.96**	**28.98**	**72.15**	**6.95**	**22.96**	**0.00**	**6.65**	**6.65**	**7.34**	**0.00**	**6.65**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2019**	**3-31-2019**	0.4309	0.4152
2	**4-1-2019**	**6-30-2019**	0.1793	0.1529
3	**7-1-2019**	**9-30-2019**	0.1813	0.1546
4	**10-1-2019**	**12-31-2019**	0.1104	0.1060
5	**1-1-2020**	**3-31-2020**	0.2031	0.2031
		Highest	0.4309	0.4152

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	0.2788	5.4200e-003	0.4142	2.6000e-004		0.0193	0.0193		0.0193	0.0193	1.7780	1.2035	2.9815	3.3200e-003	1.2000e-004	3.0991
Energy	3.9400e-003	0.0337	0.0143	2.1000e-004		2.7200e-003	2.7200e-003		2.7200e-003	2.7200e-003	0.0000	64.9787	64.9787	3.3500e-003	1.2500e-003	65.4357
Mobile	0.0551	0.2302	0.6431	2.1200e-003	0.1893	1.8300e-003	0.1911	0.0507	1.7100e-003	0.0524	0.0000	193.6344	193.6344	6.7600e-003	0.0000	193.8035
Waste						0.0000	0.0000		0.0000	0.0000	3.6417	0.0000	3.6417	0.2152	0.0000	9.0221
Water						0.0000	0.0000		0.0000	0.0000	0.8061	2.5462	3.3523	0.0831	2.0100e-003	6.0269
Total	**0.3378**	**0.2693**	**1.0716**	**2.5900e-003**	**0.1893**	**0.0239**	**0.2132**	**0.0507**	**0.0238**	**0.0744**	**6.2258**	**262.3627**	**268.5885**	**0.3117**	**3.3800e-003**	**277.3873**

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	0.2788	5.4200e-003	0.4142	2.6000e-004		0.0193	0.0193		0.0193	0.0193	1.7780	1.2035	2.9815	3.3200e-003	1.2000e-004	3.0991
Energy	3.9400e-003	0.0337	0.0143	2.1000e-004		2.7200e-003	2.7200e-003		2.7200e-003	2.7200e-003	0.0000	64.9787	64.9787	3.3500e-003	1.2500e-003	65.4357
Mobile	0.0551	0.2302	0.6431	2.1200e-003	0.1893	1.8300e-003	0.1911	0.0507	1.7100e-003	0.0524	0.0000	193.6344	193.6344	6.7600e-003	0.0000	193.8035
Waste						0.0000	0.0000		0.0000	0.0000	3.6417	0.0000	3.6417	0.2152	0.0000	9.0221
Water						0.0000	0.0000		0.0000	0.0000	0.8061	2.5462	3.3523	0.0831	2.0100e-003	6.0269
Total	**0.3378**	**0.2693**	**1.0716**	**2.5900e-003**	**0.1893**	**0.0239**	**0.2132**	**0.0507**	**0.0238**	**0.0744**	**6.2258**	**262.3627**	**268.5885**	**0.3117**	**3.3800e-003**	**277.3873**

	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	Demolition	Demolition	1/1/2019	1/14/2019	5	10	
2	Site Preparation	Site Preparation	1/29/2019	2/4/2019	5	5	
3	Grading	Grading	1/31/2019	2/22/2019	5	17	
4	Trenching	Trenching	2/6/2019	3/19/2019	5	30	
5	Building Construction	Building Construction	2/6/2019	10/15/2019	5	180	
6	Paving	Paving	11/13/2019	11/13/2019	5	1	
7	Architectural Coating	Architectural Coating	11/27/2019	3/31/2020	5	90	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 13.81

Acres of Paving: 0

Residential Indoor: 78,975; Residential Outdoor: 26,325; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	1.00	81	0.73
Demolition	Excavators	2	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Site Preparation	Graders	0	0.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Graders	1	7.00	187	0.41
Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Scrapers	1	3.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	2.00	97	0.37
Trenching	Excavators	2	4.00	158	0.38
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	1.00	231	0.29
Building Construction	Forklifts	2	5.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	2	3.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	0	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Aerial Lifts	1	1.00	63	0.31
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

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
Demolition	5	13.00	0.00	148.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	29.00	5.00	600.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Paving	3	8.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	36.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2019

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					0.0161	0.0000	0.0161	2.4300e-003	0.0000	2.4300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0600e-003	0.0408	0.0465	7.0000e-005		2.2200e-003	2.2200e-003		2.0500e-003	2.0500e-003	0.0000	6.3679	6.3679	1.9300e-003	0.0000	6.4162
Total	**4.0600e-003**	**0.0408**	**0.0465**	**7.0000e-005**	**0.0161**	**2.2200e-003**	**0.0183**	**2.4300e-003**	**2.0500e-003**	**4.4800e-003**	**0.0000**	**6.3679**	**6.3679**	**1.9300e-003**	**0.0000**	**6.4162**

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	1.8000e-004	7.9300e-003	1.3200e-003	1.0000e-005	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.9587	0.9587	1.1000e-004	0.0000	0.9615
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	8.0000e-005	4.0000e-005	4.8000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0545	0.0545	0.0000	0.0000	0.0546
Total	**2.6000e-004**	**7.9700e-003**	**1.8000e-003**	**1.0000e-005**	**1.1000e-004**	**1.0000e-005**	**1.2000e-004**	**3.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**1.0132**	**1.0132**	**1.1000e-004**	**0.0000**	**1.0161**

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					7.2200e-003	0.0000	7.2200e-003	5.5000e-004	0.0000	5.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0600e-003	0.0408	0.0465	7.0000e-005		2.2200e-003	2.2200e-003		2.0500e-003	2.0500e-003	0.0000	6.3679	6.3679	1.9300e-003	0.0000	6.4162
Total	**4.0600e-003**	**0.0408**	**0.0465**	**7.0000e-005**	**7.2200e-003**	**2.2200e-003**	**9.4400e-003**	**5.5000e-004**	**2.0500e-003**	**2.6000e-003**	**0.0000**	**6.3679**	**6.3679**	**1.9300e-003**	**0.0000**	**6.4162**

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	1.8000e-004	7.9300e-003	1.3200e-003	1.0000e-005	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.9587	0.9587	1.1000e-004	0.0000	0.9615
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	8.0000e-005	4.0000e-005	4.8000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0545	0.0545	0.0000	0.0000	0.0546
Total	**2.6000e-004**	**7.9700e-003**	**1.8000e-003**	**1.0000e-005**	**1.1000e-004**	**1.0000e-005**	**1.2000e-004**	**3.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**1.0132**	**1.0132**	**1.1000e-004**	**0.0000**	**1.0161**

3.3 Site Preparation - 2019

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					0.0151	0.0000	0.0151	8.2800e-003	0.0000	8.2800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0000e-003	0.0419	0.0222	4.0000e-005		2.2500e-003	2.2500e-003		2.0700e-003	2.0700e-003	0.0000	3.3124	3.3124	1.0500e-003	0.0000	3.3386
Total	**4.0000e-003**	**0.0419**	**0.0222**	**4.0000e-005**	**0.0151**	**2.2500e-003**	**0.0173**	**8.2800e-003**	**2.0700e-003**	**0.0104**	**0.0000**	**3.3124**	**3.3124**	**1.0500e-003**	**0.0000**	**3.3386**

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	2.0000e-005	1.0000e-005	1.5000e-004	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0168	0.0168	0.0000	0.0000	0.0168

Total	**2.0000e-005**	**1.0000e-005**	**1.5000e-004**	**0.0000**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0168**	**0.0168**	**0.0000**	**0.0000**	**0.0168**

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					6.7700e-003	0.0000	6.7700e-003	1.8600e-003	0.0000	1.8600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0000e-003	0.0419	0.0222	4.0000e-005		2.2500e-003	2.2500e-003		2.0700e-003	2.0700e-003	0.0000	3.3124	3.3124	1.0500e-003	0.0000	3.3386
Total	**4.0000e-003**	**0.0419**	**0.0222**	**4.0000e-005**	**6.7700e-003**	**2.2500e-003**	**9.0200e-003**	**1.8600e-003**	**2.0700e-003**	**3.9300e-003**	**0.0000**	**3.3124**	**3.3124**	**1.0500e-003**	**0.0000**	**3.3386**

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	2.0000e-005	1.0000e-005	1.5000e-004	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0168	0.0168	0.0000	0.0000	0.0168
Total	**2.0000e-005**	**1.0000e-005**	**1.5000e-004**	**0.0000**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0168**	**0.0168**	**0.0000**	**0.0000**	**0.0168**

3.4 Grading - 2019

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					7.3200e-003	0.0000	7.3200e-003	7.9000e-004	0.0000	7.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0000e-003	0.1000	0.0492	1.1000e-004		3.8500e-003	3.8500e-003		3.5400e-003	3.5400e-003	0.0000	9.9598	9.9598	3.1500e-003	0.0000	10.0386
Total	**8.0000e-003**	**0.1000**	**0.0492**	**1.1000e-004**	**7.3200e-003**	**3.8500e-003**	**0.0112**	**7.9000e-004**	**3.5400e-003**	**4.3300e-003**	**0.0000**	**9.9598**	**9.9598**	**3.1500e-003**	**0.0000**	**10.0386**

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	1.0000e-004	5.0000e-005	6.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0713	0.0713	0.0000	0.0000	0.0714
Total	**1.0000e-004**	**5.0000e-005**	**6.3000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0713**	**0.0713**	**0.0000**	**0.0000**	**0.0714**

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					3.3000e-003	0.0000	3.3000e-003	1.8000e-004	0.0000	1.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0000e-003	0.1000	0.0492	1.1000e-004		3.8500e-003	3.8500e-003		3.5400e-003	3.5400e-003	0.0000	9.9598	9.9598	3.1500e-003	0.0000	10.0386
Total	**8.0000e-003**	**0.1000**	**0.0492**	**1.1000e-004**	**3.3000e-003**	**3.8500e-003**	**7.1500e-003**	**1.8000e-004**	**3.5400e-003**	**3.7200e-003**	**0.0000**	**9.9598**	**9.9598**	**3.1500e-003**	**0.0000**	**10.0386**

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	1.0000e-004	5.0000e-005	6.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0713	0.0713	0.0000	0.0000	0.0714
Total	**1.0000e-004**	**5.0000e-005**	**6.3000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0713**	**0.0713**	**0.0000**	**0.0000**	**0.0714**

3.5 Trenching - 2019

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	0.0109	0.1104	0.1180	1.7000e-004		6.6200e-003	6.6200e-003		6.0900e-003	6.0900e-003	0.0000	15.3252	15.3252	4.8500e-003	0.0000	15.4464
Total	**0.0109**	**0.1104**	**0.1180**	**1.7000e-004**		**6.6200e-003**	**6.6200e-003**		**6.0900e-003**	**6.0900e-003**	**0.0000**	**15.3252**	**15.3252**	**4.8500e-003**	**0.0000**	**15.4464**

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	1.8000e-004	9.0000e-005	1.1100e-003	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1258	0.1258	1.0000e-005	0.0000	0.1260
Total	**1.8000e-004**	**9.0000e-005**	**1.1100e-003**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1258**	**0.1258**	**1.0000e-005**	**0.0000**	**0.1260**

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	0.0109	0.1104	0.1180	1.7000e-004		6.6200e-003	6.6200e-003		6.0900e-003	6.0900e-003	0.0000	15.3252	15.3252	4.8500e-003	0.0000	15.4464
Total	**0.0109**	**0.1104**	**0.1180**	**1.7000e-004**		**6.6200e-003**	**6.6200e-003**		**6.0900e-003**	**6.0900e-003**	**0.0000**	**15.3252**	**15.3252**	**4.8500e-003**	**0.0000**	**15.4464**

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	1.8000e-004	9.0000e-005	1.1100e-003	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1258	0.1258	1.0000e-005	0.0000	0.1260
Total	**1.8000e-004**	**9.0000e-005**	**1.1100e-003**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1258**	**0.1258**	**1.0000e-005**	**0.0000**	**0.1260**

3.6 Building Construction - 2019

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	0.0394	0.3860	0.3156	4.5000e-004		0.0259	0.0259		0.0238	0.0238	0.0000	40.1055	40.1055	0.0127	0.0000	40.4227
Total	**0.0394**	**0.3860**	**0.3156**	**4.5000e-004**		**0.0259**	**0.0259**		**0.0238**	**0.0238**	**0.0000**	**40.1055**	**40.1055**	**0.0127**	**0.0000**	**40.4227**

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	7.3000e-004	0.0321	5.3600e-003	4.0000e-005	2.6000e-004	4.0000e-005	3.0000e-004	7.0000e-005	4.0000e-005	1.1000e-004	0.0000	3.8866	3.8866	4.5000e-004	0.0000	3.8979
Vendor	9.8000e-004	0.0317	9.1200e-003	4.0000e-005	4.2000e-004	8.0000e-005	4.9000e-004	1.2000e-004	7.0000e-005	2.0000e-004	0.0000	3.6089	3.6089	3.9000e-004	0.0000	3.6186
Worker	3.2000e-003	1.5200e-003	0.0193	2.0000e-005	1.9400e-003	3.0000e-005	1.9700e-003	5.2000e-004	2.0000e-005	5.4000e-004	0.0000	2.1893	2.1893	1.1000e-004	0.0000	2.1920

Total	**4.9100e-003**	**0.0653**	**0.0338**	**1.0000e-004**	**2.6200e-003**	**1.5000e-004**	**2.7600e-003**	**7.1000e-004**	**1.3000e-004**	**8.5000e-004**	**0.0000**	**9.6849**	**9.6849**	**9.5000e-004**	**0.0000**	**9.7085**

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	0.0337	0.3185	0.2898	4.5000e-004		0.0230	0.0230		0.0211	0.0211	0.0000	34.2758	34.2758	0.0108	0.0000	34.5469
Total	**0.0337**	**0.3185**	**0.2898**	**4.5000e-004**		**0.0230**	**0.0230**		**0.0211**	**0.0211**	**0.0000**	**34.2758**	**34.2758**	**0.0108**	**0.0000**	**34.5469**

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	7.3000e-004	0.0321	5.3600e-003	4.0000e-005	2.6000e-004	4.0000e-005	3.0000e-004	7.0000e-005	4.0000e-005	1.1000e-004	0.0000	3.8866	3.8866	4.5000e-004	0.0000	3.8979
Vendor	9.8000e-004	0.0317	9.1200e-003	4.0000e-005	4.2000e-004	8.0000e-005	4.9000e-004	1.2000e-004	7.0000e-005	2.0000e-004	0.0000	3.6089	3.6089	3.9000e-004	0.0000	3.6186
Worker	3.2000e-003	1.5200e-003	0.0193	2.0000e-005	1.9400e-003	3.0000e-005	1.9700e-003	5.2000e-004	2.0000e-005	5.4000e-004	0.0000	2.1893	2.1893	1.1000e-004	0.0000	2.1920
Total	**4.9100e-003**	**0.0653**	**0.0338**	**1.0000e-004**	**2.6200e-003**	**1.5000e-004**	**2.7600e-003**	**7.1000e-004**	**1.3000e-004**	**8.5000e-004**	**0.0000**	**9.6849**	**9.6849**	**9.5000e-004**	**0.0000**	**9.7085**

3.7 Paving - 2019

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	3.4000e-004	3.4200e-003	3.3700e-003	0.0000		2.1000e-004	2.1000e-004		1.9000e-004	1.9000e-004	0.0000	0.4402	0.4402	1.4000e-004	0.0000	0.4437
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.4000e-004**	**3.4200e-003**	**3.3700e-003**	**0.0000**		**2.1000e-004**	**2.1000e-004**		**1.9000e-004**	**1.9000e-004**	**0.0000**	**0.4402**	**0.4402**	**1.4000e-004**	**0.0000**	**0.4437**

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	0.0000	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3.3600e-003	3.3600e-003	0.0000	0.0000	3.3600e-003
Total	**0.0000**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.3600e-003**	**3.3600e-003**	**0.0000**	**0.0000**	**3.3600e-003**

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	3.4000e-004	3.4200e-003	3.3700e-003	0.0000		2.1000e-004	2.1000e-004		1.9000e-004	1.9000e-004	0.0000	0.4402	0.4402	1.4000e-004	0.0000	0.4437
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.4000e-004**	**3.4200e-003**	**3.3700e-003**	**0.0000**		**2.1000e-004**	**2.1000e-004**		**1.9000e-004**	**1.9000e-004**	**0.0000**	**0.4402**	**0.4402**	**1.4000e-004**	**0.0000**	**0.4437**

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	0.0000	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3.3600e-003	3.3600e-003	0.0000	0.0000	3.3600e-003
Total	**0.0000**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.3600e-003**	**3.3600e-003**	**0.0000**	**0.0000**	**3.3600e-003**

3.8 Architectural Coating - 2019

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	0.0764					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0000e-005	1.0600e-003	1.7100e-003	0.0000		3.0000e-005	3.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2356	0.2356	7.0000e-005	0.0000	0.2375
Total	**0.0765**	**1.0600e-003**	**1.7100e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.2356**	**0.2356**	**7.0000e-005**	**0.0000**	**0.2375**

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	1.0000e-005	5.4000e-004	9.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0648	0.0648	1.0000e-005	0.0000	0.0650
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	9.0000e-005	4.0000e-005	5.5000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0629	0.0629	0.0000	0.0000	0.0630
Total	**1.0000e-004**	**5.8000e-004**	**6.4000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1280**

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	0.0764					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0000e-005	1.0600e-003	1.7100e-003	0.0000		3.0000e-005	3.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2356	0.2356	7.0000e-005	0.0000	0.2375
Total	**0.0765**	**1.0600e-003**	**1.7100e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.2356**	**0.2356**	**7.0000e-005**	**0.0000**	**0.2375**

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	1.0000e-005	5.4000e-004	9.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0648	0.0648	1.0000e-005	0.0000	0.0650
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	9.0000e-005	4.0000e-005	5.5000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0629	0.0629	0.0000	0.0000	0.0630
Total	**1.0000e-004**	**5.8000e-004**	**6.4000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1280**

3.8 Architectural Coating - 2020

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	0.1987					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6000e-004	2.6100e-003	4.4500e-003	1.0000e-005		6.0000e-005	6.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.5993	0.5993	1.9000e-004	0.0000	0.6042
Total	**0.1989**	**2.6100e-003**	**4.4500e-003**	**1.0000e-005**		**6.0000e-005**	**6.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.5993**	**0.5993**	**1.9000e-004**	**0.0000**	**0.6042**

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	3.0000e-005	1.3400e-003	2.2000e-004	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.1688	0.1688	2.0000e-005	0.0000	0.1693
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	2.2000e-004	1.0000e-004	1.2800e-003	0.0000	1.4000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1586	0.1586	1.0000e-005	0.0000	0.1588

Total	**2.5000e-004**	**1.4400e-003**	**1.5000e-003**	**0.0000**	**1.5000e-004**	**0.0000**	**1.7000e-004**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.3274**	**0.3274**	**3.0000e-005**	**0.0000**	**0.3280**

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	0.1987					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6000e-004	2.6100e-003	4.4500e-003	1.0000e-005		6.0000e-005	6.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.5993	0.5993	1.9000e-004	0.0000	0.6042
Total	**0.1989**	**2.6100e-003**	**4.4500e-003**	**1.0000e-005**		**6.0000e-005**	**6.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.5993**	**0.5993**	**1.9000e-004**	**0.0000**	**0.6042**

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	3.0000e-005	1.3400e-003	2.2000e-004	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.1688	0.1688	2.0000e-005	0.0000	0.1693
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	2.2000e-004	1.0000e-004	1.2800e-003	0.0000	1.4000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1586	0.1586	1.0000e-005	0.0000	0.1588
Total	**2.5000e-004**	**1.4400e-003**	**1.5000e-003**	**0.0000**	**1.5000e-004**	**0.0000**	**1.7000e-004**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.3274**	**0.3274**	**3.0000e-005**	**0.0000**	**0.3280**

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	0.0551	0.2302	0.6431	2.1200e-003	0.1893	1.8300e-003	0.1911	0.0507	1.7100e-003	0.0524	0.0000	193.6344	193.6344	6.7600e-003	0.0000	193.8035
Unmitigated	0.0551	0.2302	0.6431	2.1200e-003	0.1893	1.8300e-003	0.1911	0.0507	1.7100e-003	0.0524	0.0000	193.6344	193.6344	6.7600e-003	0.0000	193.8035

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	226.59	221.13	188.76	509,051	509,051
Parking Lot	0.00	0.00	0.00		
Total	226.59	221.13	188.76	509,051	509,051

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-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.607897	0.037434	0.184004	0.107261	0.014919	0.004991	0.012447	0.020659	0.002115	0.001554	0.005334	0.000623	0.000761
Parking Lot	0.607897	0.037434	0.184004	0.107261	0.014919	0.004991	0.012447	0.020659	0.002115	0.001554	0.005334	0.000623	0.000761

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	26.0126	26.0126	2.6000e-003	5.4000e-004	26.2380
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	26.0126	26.0126	2.6000e-003	5.4000e-004	26.2380
NaturalGas Mitigated	3.9400e-003	0.0337	0.0143	2.1000e-004		2.7200e-003	2.7200e-003		2.7200e-003	2.7200e-003	0.0000	38.9661	38.9661	7.5000e-004	7.1000e-004	39.1977
NaturalGas Unmitigated	3.9400e-003	0.0337	0.0143	2.1000e-004		2.7200e-003	2.7200e-003		2.7200e-003	2.7200e-003	0.0000	38.9661	38.9661	7.5000e-004	7.1000e-004	39.1977

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					
Condo/Townhouse	730197	3.9400e-003	0.0337	0.0143	2.1000e-004		2.7200e-003	2.7200e-003		2.7200e-003	2.7200e-003	0.0000	38.9661	38.9661	7.5000e-004	7.1000e-004	39.1977
Parking Lot	0	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
Total		**3.9400e-003**	**0.0337**	**0.0143**	**2.1000e-004**		**2.7200e-003**	**2.7200e-003**		**2.7200e-003**	**2.7200e-003**	**0.0000**	**38.9661**	**38.9661**	**7.5000e-004**	**7.1000e-004**	**39.1977**

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					
Condo/Townhouse	730197	3.9400e-003	0.0337	0.0143	2.1000e-004		2.7200e-003	2.7200e-003		2.7200e-003	2.7200e-003	0.0000	38.9661	38.9661	7.5000e-004	7.1000e-004	39.1977
Parking Lot	0	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
Total		**3.9400e-003**	**0.0337**	**0.0143**	**2.1000e-004**		**2.7200e-003**	**2.7200e-003**		**2.7200e-003**	**2.7200e-003**	**0.0000**	**38.9661**	**38.9661**	**7.5000e-004**	**7.1000e-004**	**39.1977**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	196772	25.8837	2.5900e-003	5.4000e-004	26.1080
Parking Lot	980	0.1289	1.0000e-005	0.0000	0.1300
Total		**26.0126**	**2.6000e-003**	**5.4000e-004**	**26.2380**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	196772	25.8837	2.5900e-003	5.4000e-004	26.1080

Parking Lot	980	0.1289	1.0000e-005	0.0000	0.1300
Total		**26.0126**	**2.6000e-003**	**5.4000e-004**	**26.2380**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	0.2788	5.4200e-003	0.4142	2.6000e-004		0.0193	0.0193		0.0193	0.0193	1.7780	1.2035	2.9815	3.3200e-003	1.2000e-004	3.0991
Unmitigated	0.2788	5.4200e-003	0.4142	2.6000e-004		0.0193	0.0193		0.0193	0.0193	1.7780	1.2035	2.9815	3.3200e-003	1.2000e-004	3.0991

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	0.0275					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1525					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0900	2.0700e-003	0.1239	2.5000e-004		0.0177	0.0177		0.0177	0.0177	1.7780	0.7303	2.5083	2.8600e-003	1.2000e-004	2.6145

Landscaping	8.8000e-003	3.3500e-003	0.2903	2.0000e-005		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	0.4732	0.4732	4.6000e-004	0.0000	0.4846
Total	**0.2788**	**5.4200e-003**	**0.4142**	**2.7000e-004**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**1.7780**	**1.2035**	**2.9815**	**3.3200e-003**	**1.2000e-004**	**3.0991**

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	0.0275					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1525					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0900	2.0700e-003	0.1239	2.5000e-004		0.0177	0.0177		0.0177	0.0177	1.7780	0.7303	2.5083	2.8600e-003	1.2000e-004	2.6145
Landscaping	8.8000e-003	3.3500e-003	0.2903	2.0000e-005		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	0.4732	0.4732	4.6000e-004	0.0000	0.4846
Total	**0.2788**	**5.4200e-003**	**0.4142**	**2.7000e-004**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**1.7780**	**1.2035**	**2.9815**	**3.3200e-003**	**1.2000e-004**	**3.0991**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.3523	0.0831	2.0100e-003	6.0269
Unmitigated	3.3523	0.0831	2.0100e-003	6.0269

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	2.54101 / 1.60194	3.3523	0.0831	2.0100e-003	6.0269
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**3.3523**	**0.0831**	**2.0100e-003**	**6.0269**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	2.54101 / 1.60194	3.3523	0.0831	2.0100e-003	6.0269
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**3.3523**	**0.0831**	**2.0100e-003**	**6.0269**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	3.6417	0.2152	0.0000	9.0221
Unmitigated	3.6417	0.2152	0.0000	9.0221

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	17.94	3.6417	0.2152	0.0000	9.0221
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**3.6417**	**0.2152**	**0.0000**	**9.0221**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			

Condo/Townhouse	17.94	3.6417	0.2152	0.0000	9.0221
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**3.6417**	**0.2152**	**0.0000**	**9.0221**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

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

Catalina II, TAC - Santa Clara County, Annual

Catalina II, TAC

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	7.00	Space	0.00	2,800.00	0
Condo/Townhouse	39.00	Dwelling Unit	1.70	39,000.00	112

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2020 rate 290

Land Use - Project Land use: 39 Townhomes on a 1.7 acre lot

Construction Phase - Applicant construction schedule

Off-road Equipment - Applicant Equipment Usage

Off-road Equipment - Applicant Equipment Usage

Off-road Equipment - Applicant Equipment Usage

Off-road Equipment - Applicant Equipment Usage

Off-road Equipment - Applicant Equipment Usage

Off-road Equipment - Applicant Equipment Usage

Off-road Equipment - Default trenching equipment

Trips and VMT - Construction Cement Trips: 600 OW; Paving Asphalt: 36 OW, TAC Trip length 1 mile

Demolition - 1500 tons of demo

Grading - no soil hauling

Construction Off-road Equipment Mitigation - BMPS, Tier 2 lvl 3

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	Tier	No Change	Tier 2

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	10.00	90.00
tblConstructionPhase	NumDays	200.00	180.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	4.00	17.00
tblConstructionPhase	NumDays	10.00	1.00
tblConstructionPhase	NumDays	2.00	5.00
tblLandUse	LotAcreage	0.06	0.00
tblLandUse	LotAcreage	2.44	1.70
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	6.00	1.00
tblOffRoadEquipment	UsageHours	6.00	5.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	3.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	2.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripNumber	0.00	600.00
tblTripsAndVMT	HaulingTripNumber	0.00	36.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00

tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00

2.0 Emissions Summary

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					
2019	0.1488	0.7576	0.5946	9.6000e-004	0.0414	0.0412	0.0826	0.0123	0.0379	0.0502	0.0000	86.7896	86.7896	0.0250	0.0000	87.4138
2020	0.1991	4.0500e-003	5.9400e-003	1.0000e-005	1.6000e-004	6.0000e-005	2.2000e-004	4.0000e-005	6.0000e-005	1.0000e-004	0.0000	0.9267	0.9267	2.2000e-004	0.0000	0.9322
Maximum	**0.1991**	**0.7576**	**0.5946**	**9.6000e-004**	**0.0414**	**0.0412**	**0.0826**	**0.0123**	**0.0379**	**0.0502**	**0.0000**	**86.7896**	**86.7896**	**0.0250**	**0.0000**	**87.4138**

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					
2019	0.1148	0.7957	0.5998	9.6000e-004	0.0203	4.1000e-003	0.0244	3.4000e-003	4.0900e-003	7.4900e-003	0.0000	80.9599	80.9599	0.0231	0.0000	81.5379
2020	0.1993	8.0900e-003	6.6800e-003	1.0000e-005	1.6000e-004	4.0000e-005	2.0000e-004	4.0000e-005	4.0000e-005	9.0000e-005	0.0000	0.9267	0.9267	2.2000e-004	0.0000	0.9322
Maximum	**0.1993**	**0.7957**	**0.5998**	**9.6000e-004**	**0.0203**	**4.1000e-003**	**0.0244**	**3.4000e-003**	**4.0900e-003**	**7.4900e-003**	**0.0000**	**80.9599**	**80.9599**	**0.0231**	**0.0000**	**81.5379**

	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	**9.70**	**-5.54**	**-0.99**	**0.00**	**50.84**	**89.96**	**70.32**	**72.15**	**89.12**	**84.93**	**0.00**	**6.65**	**6.65**	**7.34**	**0.00**	**6.65**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2019**	**3-31-2019**	0.4309	0.4619
2	**4-1-2019**	**6-30-2019**	0.1793	0.1661
3	**7-1-2019**	**9-30-2019**	0.1813	0.1679
4	**10-1-2019**	**12-31-2019**	0.1104	0.1104
5	**1-1-2020**	**3-31-2020**	0.2031	0.2073
		Highest	0.4309	0.4619

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	0.2788	5.4200e-003	0.4142	2.6000e-004		0.0193	0.0193		0.0193	0.0193	1.7780	1.2035	2.9815	3.3200e-003	1.2000e-004	3.0991
Energy	3.9400e-003	0.0337	0.0143	2.1000e-004		2.7200e-003	2.7200e-003		2.7200e-003	2.7200e-003	0.0000	64.9787	64.9787	3.3500e-003	1.2500e-003	65.4357
Mobile	0.0551	0.2302	0.6431	2.1200e-003	0.1893	1.8300e-003	0.1911	0.0507	1.7100e-003	0.0524	0.0000	193.6344	193.6344	6.7600e-003	0.0000	193.8035
Waste						0.0000	0.0000		0.0000	0.0000	3.6417	0.0000	3.6417	0.2152	0.0000	9.0221
Water						0.0000	0.0000		0.0000	0.0000	0.8061	2.5462	3.3523	0.0831	2.0100e-003	6.0269
Total	**0.3378**	**0.2693**	**1.0716**	**2.5900e-003**	**0.1893**	**0.0239**	**0.2132**	**0.0507**	**0.0238**	**0.0744**	**6.2258**	**262.3627**	**268.5885**	**0.3117**	**3.3800e-003**	**277.3873**

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	0.2788	5.4200e-003	0.4142	2.6000e-004		0.0193	0.0193		0.0193	0.0193	1.7780	1.2035	2.9815	3.3200e-003	1.2000e-004	3.0991
Energy	3.9400e-003	0.0337	0.0143	2.1000e-004		2.7200e-003	2.7200e-003		2.7200e-003	2.7200e-003	0.0000	64.9787	64.9787	3.3500e-003	1.2500e-003	65.4357
Mobile	0.0551	0.2302	0.6431	2.1200e-003	0.1893	1.8300e-003	0.1911	0.0507	1.7100e-003	0.0524	0.0000	193.6344	193.6344	6.7600e-003	0.0000	193.8035
Waste						0.0000	0.0000		0.0000	0.0000	3.6417	0.0000	3.6417	0.2152	0.0000	9.0221
Water						0.0000	0.0000		0.0000	0.0000	0.8061	2.5462	3.3523	0.0831	2.0100e-003	6.0269
Total	**0.3378**	**0.2693**	**1.0716**	**2.5900e-003**	**0.1893**	**0.0239**	**0.2132**	**0.0507**	**0.0238**	**0.0744**	**6.2258**	**262.3627**	**268.5885**	**0.3117**	**3.3800e-003**	**277.3873**

	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	Demolition	Demolition	1/1/2019	1/14/2019	5	10	
2	Site Preparation	Site Preparation	1/29/2019	2/4/2019	5	5	
3	Grading	Grading	1/31/2019	2/22/2019	5	17	
4	Trenching	Trenching	2/6/2019	3/19/2019	5	30	
5	Building Construction	Building Construction	2/6/2019	10/15/2019	5	180	
6	Paving	Paving	11/13/2019	11/13/2019	5	1	
7	Architectural Coating	Architectural Coating	11/27/2019	3/31/2020	5	90	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 13.81

Acres of Paving: 0

Residential Indoor: 78,975; Residential Outdoor: 26,325; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	1.00	81	0.73
Demolition	Excavators	2	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Site Preparation	Graders	0	0.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Graders	1	7.00	187	0.41
Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Scrapers	1	3.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	2.00	97	0.37
Trenching	Excavators	2	4.00	158	0.38
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	1.00	231	0.29
Building Construction	Forklifts	2	5.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	2	3.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	0	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Aerial Lifts	1	1.00	63	0.31
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

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
Demolition	5	13.00	0.00	148.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	29.00	5.00	600.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Paving	3	8.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	36.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2019

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					0.0161	0.0000	0.0161	2.4300e-003	0.0000	2.4300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0600e-003	0.0408	0.0465	7.0000e-005		2.2200e-003	2.2200e-003		2.0500e-003	2.0500e-003	0.0000	6.3679	6.3679	1.9300e-003	0.0000	6.4162

Total	**4.0600e-003**	**0.0408**	**0.0465**	**7.0000e-005**	**0.0161**	**2.2200e-003**	**0.0183**	**2.4300e-003**	**2.0500e-003**	**4.4800e-003**	**0.0000**	**6.3679**	**6.3679**	**1.9300e-003**	**0.0000**	**6.4162**

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	1.8000e-004	7.9300e-003	1.3200e-003	1.0000e-005	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.9587	0.9587	1.1000e-004	0.0000	0.9615
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	8.0000e-005	4.0000e-005	4.8000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0545	0.0545	0.0000	0.0000	0.0546
Total	**2.6000e-004**	**7.9700e-003**	**1.8000e-003**	**1.0000e-005**	**1.1000e-004**	**1.0000e-005**	**1.2000e-004**	**3.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**1.0132**	**1.0132**	**1.1000e-004**	**0.0000**	**1.0161**

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					7.2200e-003	0.0000	7.2200e-003	5.5000e-004	0.0000	5.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8900e-003	0.0623	0.0533	7.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	6.3679	6.3679	1.9300e-003	0.0000	6.4162
Total	**2.8900e-003**	**0.0623**	**0.0533**	**7.0000e-005**	**7.2200e-003**	**3.1000e-004**	**7.5300e-003**	**5.5000e-004**	**3.1000e-004**	**8.6000e-004**	**0.0000**	**6.3679**	**6.3679**	**1.9300e-003**	**0.0000**	**6.4162**

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	1.8000e-004	7.9300e-003	1.3200e-003	1.0000e-005	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.9587	0.9587	1.1000e-004	0.0000	0.9615
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	8.0000e-005	4.0000e-005	4.8000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0545	0.0545	0.0000	0.0000	0.0546
Total	**2.6000e-004**	**7.9700e-003**	**1.8000e-003**	**1.0000e-005**	**1.1000e-004**	**1.0000e-005**	**1.2000e-004**	**3.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**1.0132**	**1.0132**	**1.1000e-004**	**0.0000**	**1.0161**

3.3 Site Preparation - 2019

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					0.0151	0.0000	0.0151	8.2800e-003	0.0000	8.2800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0000e-003	0.0419	0.0222	4.0000e-005		2.2500e-003	2.2500e-003		2.0700e-003	2.0700e-003	0.0000	3.3124	3.3124	1.0500e-003	0.0000	3.3386
Total	**4.0000e-003**	**0.0419**	**0.0222**	**4.0000e-005**	**0.0151**	**2.2500e-003**	**0.0173**	**8.2800e-003**	**2.0700e-003**	**0.0104**	**0.0000**	**3.3124**	**3.3124**	**1.0500e-003**	**0.0000**	**3.3386**

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	2.0000e-005	1.0000e-005	1.5000e-004	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0168	0.0168	0.0000	0.0000	0.0168
Total	**2.0000e-005**	**1.0000e-005**	**1.5000e-004**	**0.0000**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0168**	**0.0168**	**0.0000**	**0.0000**	**0.0168**

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					6.7700e-003	0.0000	6.7700e-003	1.8600e-003	0.0000	1.8600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2500e-003	0.0331	0.0230	4.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004	0.0000	3.3124	3.3124	1.0500e-003	0.0000	3.3386
Total	**1.2500e-003**	**0.0331**	**0.0230**	**4.0000e-005**	**6.7700e-003**	**1.5000e-004**	**6.9200e-003**	**1.8600e-003**	**1.5000e-004**	**2.0100e-003**	**0.0000**	**3.3124**	**3.3124**	**1.0500e-003**	**0.0000**	**3.3386**

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	2.0000e-005	1.0000e-005	1.5000e-004	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0168	0.0168	0.0000	0.0000	0.0168
Total	**2.0000e-005**	**1.0000e-005**	**1.5000e-004**	**0.0000**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0168**	**0.0168**	**0.0000**	**0.0000**	**0.0168**

3.4 Grading - 2019

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					7.3200e-003	0.0000	7.3200e-003	7.9000e-004	0.0000	7.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0000e-003	0.1000	0.0492	1.1000e-004		3.8500e-003	3.8500e-003		3.5400e-003	3.5400e-003	0.0000	9.9598	9.9598	3.1500e-003	0.0000	10.0386
Total	**8.0000e-003**	**0.1000**	**0.0492**	**1.1000e-004**	**7.3200e-003**	**3.8500e-003**	**0.0112**	**7.9000e-004**	**3.5400e-003**	**4.3300e-003**	**0.0000**	**9.9598**	**9.9598**	**3.1500e-003**	**0.0000**	**10.0386**

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	1.0000e-004	5.0000e-005	6.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0713	0.0713	0.0000	0.0000	0.0714
Total	**1.0000e-004**	**5.0000e-005**	**6.3000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0713**	**0.0713**	**0.0000**	**0.0000**	**0.0714**

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					3.3000e-003	0.0000	3.3000e-003	1.8000e-004	0.0000	1.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0100e-003	0.0921	0.0619	1.1000e-004		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004	0.0000	9.9598	9.9598	3.1500e-003	0.0000	10.0386
Total	**3.0100e-003**	**0.0921**	**0.0619**	**1.1000e-004**	**3.3000e-003**	**3.4000e-004**	**3.6400e-003**	**1.8000e-004**	**3.4000e-004**	**5.2000e-004**	**0.0000**	**9.9598**	**9.9598**	**3.1500e-003**	**0.0000**	**10.0386**

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	1.0000e-004	5.0000e-005	6.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0713	0.0713	0.0000	0.0000	0.0714
Total	**1.0000e-004**	**5.0000e-005**	**6.3000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0713**	**0.0713**	**0.0000**	**0.0000**	**0.0714**

3.5 Trenching - 2019

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	0.0109	0.1104	0.1180	1.7000e-004		6.6200e-003	6.6200e-003		6.0900e-003	6.0900e-003	0.0000	15.3252	15.3252	4.8500e-003	0.0000	15.4464

Total	**0.0109**	**0.1104**	**0.1180**	**1.7000e-004**		**6.6200e-003**	**6.6200e-003**		**6.0900e-003**	**6.0900e-003**	**0.0000**	**15.3252**	**15.3252**	**4.8500e-003**	**0.0000**	**15.4464**

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	1.8000e-004	9.0000e-005	1.1100e-003	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1258	0.1258	1.0000e-005	0.0000	0.1260
Total	**1.8000e-004**	**9.0000e-005**	**1.1100e-003**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1258**	**0.1258**	**1.0000e-005**	**0.0000**	**0.1260**

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	7.3900e-003	0.1564	0.1290	1.7000e-004		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	15.3252	15.3252	4.8500e-003	0.0000	15.4464
Total	**7.3900e-003**	**0.1564**	**0.1290**	**1.7000e-004**		**8.5000e-004**	**8.5000e-004**		**8.5000e-004**	**8.5000e-004**	**0.0000**	**15.3252**	**15.3252**	**4.8500e-003**	**0.0000**	**15.4464**

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	1.8000e-004	9.0000e-005	1.1100e-003	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1258	0.1258	1.0000e-005	0.0000	0.1260
Total	**1.8000e-004**	**9.0000e-005**	**1.1100e-003**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1258**	**0.1258**	**1.0000e-005**	**0.0000**	**0.1260**

3.6 Building Construction - 2019

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	0.0394	0.3860	0.3156	4.5000e-004		0.0259	0.0259		0.0238	0.0238	0.0000	40.1055	40.1055	0.0127	0.0000	40.4227
Total	**0.0394**	**0.3860**	**0.3156**	**4.5000e-004**		**0.0259**	**0.0259**		**0.0238**	**0.0238**	**0.0000**	**40.1055**	**40.1055**	**0.0127**	**0.0000**	**40.4227**

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	7.3000e-004	0.0321	5.3600e-003	4.0000e-005	2.6000e-004	4.0000e-005	3.0000e-004	7.0000e-005	4.0000e-005	1.1000e-004	0.0000	3.8866	3.8866	4.5000e-004	0.0000	3.8979
Vendor	9.8000e-004	0.0317	9.1200e-003	4.0000e-005	4.2000e-004	8.0000e-005	4.9000e-004	1.2000e-004	7.0000e-005	2.0000e-004	0.0000	3.6089	3.6089	3.9000e-004	0.0000	3.6186
Worker	3.2000e-003	1.5200e-003	0.0193	2.0000e-005	1.9400e-003	3.0000e-005	1.9700e-003	5.2000e-004	2.0000e-005	5.4000e-004	0.0000	2.1893	2.1893	1.1000e-004	0.0000	2.1920
Total	**4.9100e-003**	**0.0653**	**0.0338**	**1.0000e-004**	**2.6200e-003**	**1.5000e-004**	**2.7600e-003**	**7.1000e-004**	**1.3000e-004**	**8.5000e-004**	**0.0000**	**9.6849**	**9.6849**	**9.5000e-004**	**0.0000**	**9.7085**

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	0.0180	0.3707	0.2888	4.5000e-004		2.2500e-003	2.2500e-003		2.2500e-003	2.2500e-003	0.0000	34.2758	34.2758	0.0108	0.0000	34.5469
Total	**0.0180**	**0.3707**	**0.2888**	**4.5000e-004**		**2.2500e-003**	**2.2500e-003**		**2.2500e-003**	**2.2500e-003**	**0.0000**	**34.2758**	**34.2758**	**0.0108**	**0.0000**	**34.5469**

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	7.3000e-004	0.0321	5.3600e-003	4.0000e-005	2.6000e-004	4.0000e-005	3.0000e-004	7.0000e-005	4.0000e-005	1.1000e-004	0.0000	3.8866	3.8866	4.5000e-004	0.0000	3.8979
Vendor	9.8000e-004	0.0317	9.1200e-003	4.0000e-005	4.2000e-004	8.0000e-005	4.9000e-004	1.2000e-004	7.0000e-005	2.0000e-004	0.0000	3.6089	3.6089	3.9000e-004	0.0000	3.6186
Worker	3.2000e-003	1.5200e-003	0.0193	2.0000e-005	1.9400e-003	3.0000e-005	1.9700e-003	5.2000e-004	2.0000e-005	5.4000e-004	0.0000	2.1893	2.1893	1.1000e-004	0.0000	2.1920
Total	**4.9100e-003**	**0.0653**	**0.0338**	**1.0000e-004**	**2.6200e-003**	**1.5000e-004**	**2.7600e-003**	**7.1000e-004**	**1.3000e-004**	**8.5000e-004**	**0.0000**	**9.6849**	**9.6849**	**9.5000e-004**	**0.0000**	**9.7085**

3.7 Paving - 2019

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	3.4000e-004	3.4200e-003	3.3700e-003	0.0000		2.1000e-004	2.1000e-004		1.9000e-004	1.9000e-004	0.0000	0.4402	0.4402	1.4000e-004	0.0000	0.4437
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.4000e-004**	**3.4200e-003**	**3.3700e-003**	**0.0000**		**2.1000e-004**	**2.1000e-004**		**1.9000e-004**	**1.9000e-004**	**0.0000**	**0.4402**	**0.4402**	**1.4000e-004**	**0.0000**	**0.4437**

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	0.0000	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3.3600e-003	3.3600e-003	0.0000	0.0000	3.3600e-003
Total	**0.0000**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.3600e-003**	**3.3600e-003**	**0.0000**	**0.0000**	**3.3600e-003**

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	2.1000e-004	4.5200e-003	3.7100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.4402	0.4402	1.4000e-004	0.0000	0.4437
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.1000e-004**	**4.5200e-003**	**3.7100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.4402**	**0.4402**	**1.4000e-004**	**0.0000**	**0.4437**

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	0.0000	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3.3600e-003	3.3600e-003	0.0000	0.0000	3.3600e-003
Total	**0.0000**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.3600e-003**	**3.3600e-003**	**0.0000**	**0.0000**	**3.3600e-003**

3.8 Architectural Coating - 2019

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	0.0764					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	6.0000e-005	1.0600e-003	1.7100e-003	0.0000		3.0000e-005	3.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2356	0.2356	7.0000e-005	0.0000	0.2375
Total	**0.0765**	**1.0600e-003**	**1.7100e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.2356**	**0.2356**	**7.0000e-005**	**0.0000**	**0.2375**

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	1.0000e-005	5.4000e-004	9.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0648	0.0648	1.0000e-005	0.0000	0.0650
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	9.0000e-005	4.0000e-005	5.5000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0629	0.0629	0.0000	0.0000	0.0630
Total	**1.0000e-004**	**5.8000e-004**	**6.4000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1280**

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	0.0764					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2000e-004	2.5600e-003	1.9900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2356	0.2356	7.0000e-005	0.0000	0.2375
Total	**0.0765**	**2.5600e-003**	**1.9900e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.2356**	**0.2356**	**7.0000e-005**	**0.0000**	**0.2375**

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	1.0000e-005	5.4000e-004	9.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0648	0.0648	1.0000e-005	0.0000	0.0650
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	9.0000e-005	4.0000e-005	5.5000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0629	0.0629	0.0000	0.0000	0.0630
Total	**1.0000e-004**	**5.8000e-004**	**6.4000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1280**

3.8 Architectural Coating - 2020

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	0.1987					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6000e-004	2.6100e-003	4.4500e-003	1.0000e-005		6.0000e-005	6.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.5993	0.5993	1.9000e-004	0.0000	0.6042
Total	**0.1989**	**2.6100e-003**	**4.4500e-003**	**1.0000e-005**		**6.0000e-005**	**6.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.5993**	**0.5993**	**1.9000e-004**	**0.0000**	**0.6042**

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	3.0000e-005	1.3400e-003	2.2000e-004	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.1688	0.1688	2.0000e-005	0.0000	0.1693
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	2.2000e-004	1.0000e-004	1.2800e-003	0.0000	1.4000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1586	0.1586	1.0000e-005	0.0000	0.1588
Total	**2.5000e-004**	**1.4400e-003**	**1.5000e-003**	**0.0000**	**1.5000e-004**	**0.0000**	**1.7000e-004**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.3274**	**0.3274**	**3.0000e-005**	**0.0000**	**0.3280**

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	0.1987					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-004	6.6500e-003	5.1800e-003	1.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5993	0.5993	1.9000e-004	0.0000	0.6042
Total	**0.1990**	**6.6500e-003**	**5.1800e-003**	**1.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.5993**	**0.5993**	**1.9000e-004**	**0.0000**	**0.6042**

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	3.0000e-005	1.3400e-003	2.2000e-004	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.1688	0.1688	2.0000e-005	0.0000	0.1693
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	2.2000e-004	1.0000e-004	1.2800e-003	0.0000	1.4000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1586	0.1586	1.0000e-005	0.0000	0.1588
Total	**2.5000e-004**	**1.4400e-003**	**1.5000e-003**	**0.0000**	**1.5000e-004**	**0.0000**	**1.7000e-004**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.3274**	**0.3274**	**3.0000e-005**	**0.0000**	**0.3280**

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	0.0551	0.2302	0.6431	2.1200e-003	0.1893	1.8300e-003	0.1911	0.0507	1.7100e-003	0.0524	0.0000	193.6344	193.6344	6.7600e-003	0.0000	193.8035
Unmitigated	0.0551	0.2302	0.6431	2.1200e-003	0.1893	1.8300e-003	0.1911	0.0507	1.7100e-003	0.0524	0.0000	193.6344	193.6344	6.7600e-003	0.0000	193.8035

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	226.59	221.13	188.76	509,051	509,051
Parking Lot	0.00	0.00	0.00		
Total	226.59	221.13	188.76	509,051	509,051

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
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.607897	0.037434	0.184004	0.107261	0.014919	0.004991	0.012447	0.020659	0.002115	0.001554	0.005334	0.000623	0.000761

Parking Lot	0.607897	0.037434	0.184004	0.107261	0.014919	0.004991	0.012447	0.020659	0.002115	0.001554	0.005334	0.000623	0.000761

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	26.0126	26.0126	2.6000e-003	5.4000e-004	26.2380
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	26.0126	26.0126	2.6000e-003	5.4000e-004	26.2380
NaturalGas Mitigated	3.9400e-003	0.0337	0.0143	2.1000e-004		2.7200e-003	2.7200e-003		2.7200e-003	2.7200e-003	0.0000	38.9661	38.9661	7.5000e-004	7.1000e-004	39.1977
NaturalGas Unmitigated	3.9400e-003	0.0337	0.0143	2.1000e-004		2.7200e-003	2.7200e-003		2.7200e-003	2.7200e-003	0.0000	38.9661	38.9661	7.5000e-004	7.1000e-004	39.1977

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					
Condo/Townhouse	730197	3.9400e-003	0.0337	0.0143	2.1000e-004		2.7200e-003	2.7200e-003		2.7200e-003	2.7200e-003	0.0000	38.9661	38.9661	7.5000e-004	7.1000e-004	39.1977
Parking Lot	0	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

Total		**3.9400e-003**	**0.0337**	**0.0143**	**2.1000e-004**		**2.7200e-003**	**2.7200e-003**		**2.7200e-003**	**2.7200e-003**	**0.0000**	**38.9661**	**38.9661**	**7.5000e-004**	**7.1000e-004**	**39.1977**

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					
Condo/Townhouse	730197	3.9400e-003	0.0337	0.0143	2.1000e-004		2.7200e-003	2.7200e-003		2.7200e-003	2.7200e-003	0.0000	38.9661	38.9661	7.5000e-004	7.1000e-004	39.1977
Parking Lot	0	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
Total		**3.9400e-003**	**0.0337**	**0.0143**	**2.1000e-004**		**2.7200e-003**	**2.7200e-003**		**2.7200e-003**	**2.7200e-003**	**0.0000**	**38.9661**	**38.9661**	**7.5000e-004**	**7.1000e-004**	**39.1977**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	196772	25.8837	2.5900e-003	5.4000e-004	26.1080
Parking Lot	980	0.1289	1.0000e-005	0.0000	0.1300
Total		**26.0126**	**2.6000e-003**	**5.4000e-004**	**26.2380**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	196772	25.8837	2.5900e-003	5.4000e-004	26.1080
Parking Lot	980	0.1289	1.0000e-005	0.0000	0.1300
Total		**26.0126**	**2.6000e-003**	**5.4000e-004**	**26.2380**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	0.2788	5.4200e-003	0.4142	2.6000e-004		0.0193	0.0193		0.0193	0.0193	1.7780	1.2035	2.9815	3.3200e-003	1.2000e-004	3.0991
Unmitigated	0.2788	5.4200e-003	0.4142	2.6000e-004		0.0193	0.0193		0.0193	0.0193	1.7780	1.2035	2.9815	3.3200e-003	1.2000e-004	3.0991

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	0.0275					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1525					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0900	2.0700e-003	0.1239	2.5000e-004		0.0177	0.0177		0.0177	0.0177	1.7780	0.7303	2.5083	2.8600e-003	1.2000e-004	2.6145
Landscaping	8.8000e-003	3.3500e-003	0.2903	2.0000e-005		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	0.4732	0.4732	4.6000e-004	0.0000	0.4846
Total	**0.2788**	**5.4200e-003**	**0.4142**	**2.7000e-004**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**1.7780**	**1.2035**	**2.9815**	**3.3200e-003**	**1.2000e-004**	**3.0991**

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	0.0275					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1525					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0900	2.0700e-003	0.1239	2.5000e-004		0.0177	0.0177		0.0177	0.0177	1.7780	0.7303	2.5083	2.8600e-003	1.2000e-004	2.6145
Landscaping	8.8000e-003	3.3500e-003	0.2903	2.0000e-005		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	0.4732	0.4732	4.6000e-004	0.0000	0.4846
Total	**0.2788**	**5.4200e-003**	**0.4142**	**2.7000e-004**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**1.7780**	**1.2035**	**2.9815**	**3.3200e-003**	**1.2000e-004**	**3.0991**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e

Category	MT/yr			
Mitigated	3.3523	0.0831	2.0100e-003	6.0269
Unmitigated	3.3523	0.0831	2.0100e-003	6.0269

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	2.54101 / 1.60194	3.3523	0.0831	2.0100e-003	6.0269
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**3.3523**	**0.0831**	**2.0100e-003**	**6.0269**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	2.54101 / 1.60194	3.3523	0.0831	2.0100e-003	6.0269
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**3.3523**	**0.0831**	**2.0100e-003**	**6.0269**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	3.6417	0.2152	0.0000	9.0221
Unmitigated	3.6417	0.2152	0.0000	9.0221

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	17.94	3.6417	0.2152	0.0000	9.0221
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**3.6417**	**0.2152**	**0.0000**	**9.0221**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	17.94	3.6417	0.2152	0.0000	9.0221
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**3.6417**	**0.2152**	**0.0000**	**9.0221**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

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

Attachment 3: El Camino Real Traffic Emissions and Health Risk Calculations

Catalina II Residential Development, Santa Clara, CA
El Camino Real
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2021

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Width (ft)	Link Width (m)	Release Height (m)	Diesel ADT	Average Speed (mph)
EB-El Camino	Eastbound El Camino Real	E	3	861	36	11.0	3.4	478	35
WB-ElCamino	Westbound El Camino Real	W	3	856	36	11.0	3.4	478	35

2021 Hourly Diesel Traffic Volumes Per Direction and DPM Emissions - EB-El Camino

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.04%	15	0.0159	9	7.26%	35	0.0135	17	6.46%	31	0.0132
2	2.29%	11	0.0159	10	5.48%	26	0.0159	18	4.97%	24	0.0124
3	2.61%	12	0.0160	11	4.82%	23	0.0159	19	4.29%	20	0.0118
4	2.53%	12	0.0159	12	7.65%	37	0.0136	20	0.71%	3	0.0156
5	1.76%	8	0.0159	13	6.96%	33	0.0134	21	2.37%	11	0.0158
6	2.42%	12	0.0159	14	6.96%	33	0.0134	22	3.12%	15	0.0158
7	4.41%	21	0.0158	15	6.16%	29	0.0131	23	1.94%	9	0.0159
8	5.84%	28	0.0129	16	5.27%	25	0.0126	24	0.68%	3	0.0157
								Total		478	

2021 Hourly Diesel Traffic Volumes Per Direction and DPM Emissions - WB-ElCamino

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.04%	15	0.0159	9	7.26%	35	0.0135	17	6.46%	31	0.0132
2	2.29%	11	0.0159	10	5.48%	26	0.0159	18	4.97%	24	0.0124
3	2.61%	12	0.0160	11	4.82%	23	0.0159	19	4.29%	20	0.0118
4	2.53%	12	0.0159	12	7.65%	37	0.0136	20	0.71%	3	0.0156
5	1.76%	8	0.0159	13	6.96%	33	0.0134	21	2.37%	11	0.0158
6	2.42%	12	0.0159	14	6.96%	33	0.0134	22	3.12%	15	0.0158
7	4.41%	21	0.0158	15	6.16%	29	0.0131	23	1.94%	9	0.0159
8	5.84%	28	0.0129	16	5.27%	25	0.0126	24	0.68%	3	0.0157
								Total		478	

Catalina II Residential Development, Santa Clara, CA
El Camino Real
PM2.5 & TOG Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2021

Group Link	Description	Direction	No. Lanes	Link Length (m)	Link Width (ft)	Link Width (m)	Release Height (m)	ADT	Average Speed (mph)
EB-El Camino	Eastbound El Camino Real	E	3	861	56	17.0	1.3	15,225	35
WB-ElCamino	Westbound El Camino Real	W	3	856	56	17.0	1.3	15,225	35

2021 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - EB-El Camino

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	170	0.0229	9	7.09%	1079	0.0208	17	7.39%	1124	0.0204
2	0.39%	59	0.0244	10	4.32%	657	0.0218	18	8.24%	1254	0.0201
3	0.34%	52	0.0251	11	4.63%	705	0.0211	19	5.76%	877	0.0200
4	0.22%	34	0.0366	12	5.86%	892	0.0210	20	4.33%	659	0.0199
5	0.47%	72	0.0239	13	6.17%	939	0.0207	21	3.27%	498	0.0204
6	0.86%	130	0.0250	14	6.03%	919	0.0207	22	3.31%	503	0.0208
7	3.78%	575	0.0214	15	7.05%	1073	0.0204	23	2.47%	375	0.0205
8	7.85%	1195	0.0201	16	7.19%	1095	0.0202	24	1.88%	287	0.0200
								Total		15,225	

2021 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - WB-ElCamino

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	170	0.0229	9	7.09%	1079	0.0208	17	7.39%	1124	0.0204
2	0.39%	59	0.0244	10	4.32%	657	0.0218	18	8.24%	1254	0.0201
3	0.34%	52	0.0251	11	4.63%	705	0.0211	19	5.76%	877	0.0200
4	0.22%	34	0.0366	12	5.86%	892	0.0210	20	4.33%	659	0.0199
5	0.47%	72	0.0239	13	6.17%	939	0.0207	21	3.27%	498	0.0204
6	0.86%	130	0.0250	14	6.03%	919	0.0207	22	3.31%	503	0.0208
7	3.78%	575	0.0214	15	7.05%	1073	0.0204	23	2.47%	375	0.0205
8	7.85%	1195	0.0201	16	7.19%	1095	0.0202	24	1.88%	287	0.0200
								Total		15,225	

Catalina II Residential Development, Santa Clara, CA
El Camino Real
Entrained PM2.5 Road Dust Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2021

Group Link	Description	Direction	No. Lanes	Link Length (m)	Link Width (ft)	Link Width (m)	Release Height (m)	ADT	Average Speed (mph)
EB-El Camino	Eastbound El Camino Real	E	3	861	56	17.0	1.3	15,225	35
WB-ElCamino	Westbound El Camino Real	W	3	856	56	17.0	1.3	15,225	35

2021 Hourly Traffic Volumes Per Direction and Road Dust PM2.5 Emissions - EB-El Camino

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	170	0.0153	9	7.09%	1079	0.0153	17	7.39%	1124	0.0153
2	0.39%	59	0.0153	10	4.32%	657	0.0153	18	8.24%	1254	0.0153
3	0.34%	52	0.0153	11	4.63%	705	0.0153	19	5.76%	877	0.0153
4	0.22%	34	0.0153	12	5.86%	892	0.0153	20	4.33%	659	0.0153
5	0.47%	72	0.0153	13	6.17%	939	0.0153	21	3.27%	498	0.0153
6	0.86%	130	0.0153	14	6.03%	919	0.0153	22	3.31%	503	0.0153
7	3.78%	575	0.0153	15	7.05%	1073	0.0153	23	2.47%	375	0.0153
8	7.85%	1195	0.0153	16	7.19%	1095	0.0153	24	1.88%	287	0.0153
								Total		15,225	

2021 Hourly Traffic Volumes Per Direction and Road Dust PM2.5 Emissions - WB-ElCamino

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	170	0.0153	9	7.09%	1079	0.0153	17	7.39%	1124	0.0153
2	0.39%	59	0.0153	10	4.32%	657	0.0153	18	8.24%	1254	0.0153
3	0.34%	52	0.0153	11	4.63%	705	0.0153	19	5.76%	877	0.0153
4	0.22%	34	0.0153	12	5.86%	892	0.0153	20	4.33%	659	0.0153
5	0.47%	72	0.0153	13	6.17%	939	0.0153	21	3.27%	498	0.0153
6	0.86%	130	0.0153	14	6.03%	919	0.0153	22	3.31%	503	0.0153
7	3.78%	575	0.0153	15	7.05%	1073	0.0153	23	2.47%	375	0.0153
8	7.85%	1195	0.0153	16	7.19%	1095	0.0153	24	1.88%	287	0.0153
								Total		15,225	

Catalina II Residential Development, Santa Clara, CA
El Camino Real Traffic Data and PM2.5 & TOG Emission Factors - 35 mph

Analysis Year = ***2021***

Vehicle Type	2016 Caltrans Number Vehicles (veh/day)	2021 Number Vehicles (veh/day)	2021 Percent Diesel	Number Diesel Vehicles (veh/day)	Vehicle Speed (mph)	Emission Factors: Diesel Vehicles DPM (g/VMT)	All Vehicles: Total PM2.5 (g/VMT)	All Vehicles: Exhaust PM2.5 (g/VMT)	Gas Vehicles: Exhaust TOG (g/VMT)	Gas Vehicles: Running TOG (g/VMT)
LDA	19,692	20,676	1.10%	228	35	0.0088	0.0193	0.0016	0.0153	0.042
LDT	7,446	7,819	0.18%	14	35	0.0122	0.0193	0.0016	0.0237	0.090
MDT	1,242	1,304	10.15%	132	35	0.0160	0.0238	0.0031	0.0463	0.182
HDT	620	651	89.36%	581	35	0.0159	0.0732	0.0145	0.1364	0.097
Total	29,000	30,450	-	956	35	-	-		-	-
Mix Avg Emission Factor						**0.01414**	**0.02068**	**0.00193**	**0.01903**	**0.06068**
Increase From 2016		1.05								
Vehicles/Direction		15,225		478						
Avg Vehicles/Hour/Direction		**634**		**20**						

Traffic Data Year = ***2016***

CalTrans AADT & Truck AADT	Total	Total Truck	Truck by Axle: 2	3	4	5
Rte 82, B Santa Clara, Scott Blvd	29,000	1,862	1,242	199	29	392
Rte 82, B Santa Clara, Benton Rd			66.71%	10.67%	1.56%	21.05%
Percent of Total Vehicles		6.42%	4.28%	0.69%	0.10%	1.35%

Traffic Increase per Year (%) = ***1.00%***

Catalina II Residential Development, Santa Clara, CA
El Camino Real Traffic Data and Entrained PM2.5 Road Dust Emission Factors

$E_{2.5} = [k(sL)^{0.91} \times (W)^{1.02} \times (1-P/4N) \times 453.59$

where:

$E_{2.5}$ = $PM_{2.5}$ emission factor (g/VMT)

k = particle size multiplier (g/VMT) [$k_{PM2.5} = k_{PM10} \times (0.0686/0.4572) = 1.0 \times 0.15 = 0.15$ g/VMT][a]

sL = roadway specific silt loading (g/m^2)

W = average weight of vehicles on road (Bay Area default = 2.4 tons)[a]

P = number of days with at least 0.01 inch of precipitation in the annual averaging period

N = number of days in the annual averaging period (default = 365)

Notes: [a] CARB 2014, Miscellaneous Process Methodology 7.9, Entrained Road Travel, Paved Road Dust (Revised and updated, April 2014)

Road Type	Silt Loading (g/m^2)	Average Weight (tons)	County	No. Days ppt > 0.01"	$PM_{2.5}$ Emission Factor (g/VMT)
Major	0.032	2.4	Santa Clara	64	0.01528

SFBAAB[a]

Road Type	Silt Loading (g/m^2)
Collector	0.032
Freeway	0.02
Local	0.32
Major	0.032

SFBAAB[a]

County	>0.01 inch precipitation
Alameda	61
Contra Costa	60
Marin	66
Napa	68
San Francisco	67
San Mateo	60
Santa Clara	64
Solano	54
Sonoma	69

Catalina II Residential, Santa Clara, CA - El Camino Real Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
On-Site 1st Floor Residential Receptors (1.5 meter receptor heights)

Emissions Year	2021
Receptor Information	
Number of Receptors	39
Receptor Height =	1.5 m first floor level
Receptor distances =	receptors placed at new residential units
Meteorological Conditions	
BAAQMD San Jose Airport Met Data	2006-2010
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

MEI Maximum Concentrations

Meteorological Data Years	Concentration (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2006-2010	0.00385	0.1759	0.5601

Meteorological Data Years	PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Road Dust PM2.5	Vehicle PM2.5
2006-2010	0.3298	0.1386	0.1912

Catalina II Residential, Santa Clara, CA - El Camino Real Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
On-Site 2nd Floor Residential Receptors (4.5 meter receptor heights)

Emissions Year	2021
Receptor Information	
Number of Receptors	39
Receptor Height =	4.5 m second floor level
Receptor distances =	receptors placed at new residential units
Meteorological Conditions	
BAAQMD San Jose Airport Met Data	2006-2010
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

MEI Maximum Concentrations

Meteorological Data Years	Concentration (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2006-2010	0.00325	0.1149	0.3659

Meteorological Data Years	PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Road Dust PM2.5	Vehicle PM2.5
2006-2010	0.2154	0.0905	0.1249

Catalina II Residential, Santa Clara, CA - El Camino Real Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
On-Site 3rd Floor Residential Receptors (7.6 meter receptor heights)

Emissions Year	2021
Receptor Information	
Number of Receptors	39
Receptor Height =	7.6 m third floor level
Receptor distances =	receptors placed at new residential units
Meteorological Conditions	
BAAQMD San Jose Airport Met Data	2006-2010
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

MEI Maximum Concentrations

Meteorological Data Years	Concentration (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2006-2010	0.00189	0.0525	0.1671

Meteorological Data Years	PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Road Dust PM2.5	Vehicle PM2.5
2006-2010	0.0984	0.0414	0.0570

Catalina II Residential, Santa Clara, CA - El Camino Real Traffic -Maximum Cancer Risks
On-Site 1st Floor Residential Receptors (1.5 meter receptor heights)
30-Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

	Infant/Child			Adult
Age -->	3rd Trimester	0 - <2	2 - <16	16 - 30
Parameter				
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

				Maximum - Exposure Information				Cancer Risk (per million)			
					Annual TAC Conc (ug/m3)						
Exposure Year	Year	Exposure Duration (years)	Age	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	Total
0	2021	0.25	-0.25 - 0*	10	0.0039	0.1759	0.5601	0.052	0.014	0.003	0.07
1	2021	1	1	10	0.0039	0.1759	0.5601	0.63	0.165	0.031	0.83
2	2022	1	2	10	0.0039	0.1759	0.5601	0.63	0.165	0.031	0.83
3	2023	1	3	3	0.0039	0.1759	0.5601	0.10	0.026	0.005	0.13
4	2024	1	4	3	0.0039	0.1759	0.5601	0.10	0.026	0.005	0.13
5	2025	1	5	3	0.0039	0.1759	0.5601	0.10	0.026	0.005	0.13
6	2026	1	6	3	0.0039	0.1759	0.5601	0.10	0.026	0.005	0.13
7	2027	1	7	3	0.0039	0.1759	0.5601	0.10	0.026	0.005	0.13
8	2028	1	8	3	0.0039	0.1759	0.5601	0.10	0.026	0.005	0.13
9	2029	1	9	3	0.0039	0.1759	0.5601	0.10	0.026	0.005	0.13
10	2030	1	10	3	0.0039	0.1759	0.5601	0.10	0.026	0.005	0.13
11	2031	1	11	3	0.0039	0.1759	0.5601	0.10	0.026	0.005	0.13
12	2032	1	12	3	0.0039	0.1759	0.5601	0.10	0.026	0.005	0.13
13	2033	1	13	3	0.0039	0.1759	0.5601	0.10	0.026	0.005	0.13
14	2034	1	14	3	0.0039	0.1759	0.5601	0.10	0.026	0.005	0.13
15	2035	1	15	3	0.0039	0.1759	0.5601	0.10	0.026	0.005	0.13
16	2036	1	16	3	0.0039	0.1759	0.5601	0.10	0.026	0.005	0.13
17	2037	1	17	1	0.0039	0.1759	0.5601	0.01	0.0029	0.001	0.014
18	2038	1	18	1	0.0039	0.1759	0.5601	0.01	0.003	0.001	0.014
19	2039	1	19	1	0.0039	0.1759	0.5601	0.01	0.003	0.001	0.014
20	2040	1	20	1	0.0039	0.1759	0.5601	0.01	0.003	0.001	0.014
21	2041	1	21	1	0.0039	0.1759	0.5601	0.01	0.003	0.001	0.014
22	2042	1	22	1	0.0039	0.1759	0.5601	0.01	0.003	0.001	0.014
23	2043	1	23	1	0.0039	0.1759	0.5601	0.01	0.003	0.001	0.014
24	2044	1	24	1	0.0039	0.1759	0.5601	0.01	0.003	0.001	0.014
25	2045	1	25	1	0.0039	0.1759	0.5601	0.01	0.003	0.001	0.014
26	2046	1	26	1	0.0039	0.1759	0.5601	0.01	0.003	0.001	0.014
27	2047	1	27	1	0.0039	0.1759	0.5601	0.01	0.003	0.001	0.014
28	2048	1	28	1	0.0039	0.1759	0.5601	0.01	0.003	0.001	0.014
29	2049	1	29	1	0.0039	0.1759	0.5601	0.01	0.003	0.001	0.014
30	2050	1	30	1	0.0039	0.1759	0.5601	0.01	0.003	0.001	0.014
Total Increased Cancer Risk			**Total**					2.87	0.747	0.140	**3.8**

* Third trimester of pregnancy

Catalina II Residential, Santa Clara, CA - El Camino Real Traffic -Maximum Cancer Risks
On-Site 2nd Floor Residential Receptors (4.5 meter receptor heights)
30-Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

	Infant/Child			Adult
Age -->	3rd Trimester	0 - <2	2 - <16	16 - 30
Parameter				
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

				Maximum - Exposure Information				Cancer Risk (per million)			
					Annual TAC Conc (ug/m3)						
Exposure Year	Year	Exposure Duration (years)	Age	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	Total
0	2021	0.25	-0.25 - 0*	10	0.0033	0.1149	0.3659	0.044	0.009	0.002	0.05
1	2021	1	1	10	0.0033	0.1149	0.3659	0.53	0.108	0.020	0.66
2	2022	1	2	10	0.0033	0.1149	0.3659	0.53	0.108	0.020	0.66
3	2023	1	3	3	0.0033	0.1149	0.3659	0.08	0.017	0.003	0.10
4	2024	1	4	3	0.0033	0.1149	0.3659	0.08	0.017	0.003	0.10
5	2025	1	5	3	0.0033	0.1149	0.3659	0.08	0.017	0.003	0.10
6	2026	1	6	3	0.0033	0.1149	0.3659	0.08	0.017	0.003	0.10
7	2027	1	7	3	0.0033	0.1149	0.3659	0.08	0.017	0.003	0.10
8	2028	1	8	3	0.0033	0.1149	0.3659	0.08	0.017	0.003	0.10
9	2029	1	9	3	0.0033	0.1149	0.3659	0.08	0.017	0.003	0.10
10	2030	1	10	3	0.0033	0.1149	0.3659	0.08	0.017	0.003	0.10
11	2031	1	11	3	0.0033	0.1149	0.3659	0.08	0.017	0.003	0.10
12	2032	1	12	3	0.0033	0.1149	0.3659	0.08	0.017	0.003	0.10
13	2033	1	13	3	0.0033	0.1149	0.3659	0.08	0.017	0.003	0.10
14	2034	1	14	3	0.0033	0.1149	0.3659	0.08	0.017	0.003	0.10
15	2035	1	15	3	0.0033	0.1149	0.3659	0.08	0.017	0.003	0.10
16	2036	1	16	3	0.0033	0.1149	0.3659	0.08	0.017	0.003	0.10
17	2037	1	17	1	0.0033	0.1149	0.3659	0.01	0.0019	0.000	0.012
18	2038	1	18	1	0.0033	0.1149	0.3659	0.01	0.002	0.000	0.012
19	2039	1	19	1	0.0033	0.1149	0.3659	0.01	0.002	0.000	0.012
20	2040	1	20	1	0.0033	0.1149	0.3659	0.01	0.002	0.000	0.012
21	2041	1	21	1	0.0033	0.1149	0.3659	0.01	0.002	0.000	0.012
22	2042	1	22	1	0.0033	0.1149	0.3659	0.01	0.002	0.000	0.012
23	2043	1	23	1	0.0033	0.1149	0.3659	0.01	0.002	0.000	0.012
24	2044	1	24	1	0.0033	0.1149	0.3659	0.01	0.002	0.000	0.012
25	2045	1	25	1	0.0033	0.1149	0.3659	0.01	0.002	0.000	0.012
26	2046	1	26	1	0.0033	0.1149	0.3659	0.01	0.002	0.000	0.012
27	2047	1	27	1	0.0033	0.1149	0.3659	0.01	0.002	0.000	0.012
28	2048	1	28	1	0.0033	0.1149	0.3659	0.01	0.002	0.000	0.012
29	2049	1	29	1	0.0033	0.1149	0.3659	0.01	0.002	0.000	0.012
30	2050	1	30	1	0.0033	0.1149	0.3659	0.01	0.002	0.000	0.012
Total Increased Cancer Risk			**Total**					2.42	0.488	0.092	**3.0**

* Third trimester of pregnancy

Catalina II Residential, Santa Clara, CA - El Camino Real Traffic -Maximum Cancer Risks
On-Site 3rd Floor Residential Receptors (7.6 meter receptor heights)
30-Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

	Infant/Child			Adult
Age -->	3rd Trimester	0 - <2	2 - <16	16 - 30
Parameter				
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

				Maximum - Exposure Information				Cancer Risk (per million)			
					Annual TAC Conc (ug/m3)						
Exposure Year	Year	Exposure Duration (years)	Age	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	Total
0	2021	0.25	-0.25 - 0*	10	0.0019	0.0525	0.1671	0.026	0.004	0.001	0.03
1	2021	1	1	10	0.0019	0.0525	0.1671	0.31	0.049	0.009	0.37
2	2022	1	2	10	0.0019	0.0525	0.1671	0.31	0.049	0.009	0.37
3	2023	1	3	3	0.0019	0.0525	0.1671	0.05	0.008	0.001	0.06
4	2024	1	4	3	0.0019	0.0525	0.1671	0.05	0.008	0.001	0.06
5	2025	1	5	3	0.0019	0.0525	0.1671	0.05	0.008	0.001	0.06
6	2026	1	6	3	0.0019	0.0525	0.1671	0.05	0.008	0.001	0.06
7	2027	1	7	3	0.0019	0.0525	0.1671	0.05	0.008	0.001	0.06
8	2028	1	8	3	0.0019	0.0525	0.1671	0.05	0.008	0.001	0.06
9	2029	1	9	3	0.0019	0.0525	0.1671	0.05	0.008	0.001	0.06
10	2030	1	10	3	0.0019	0.0525	0.1671	0.05	0.008	0.001	0.06
11	2031	1	11	3	0.0019	0.0525	0.1671	0.05	0.008	0.001	0.06
12	2032	1	12	3	0.0019	0.0525	0.1671	0.05	0.008	0.001	0.06
13	2033	1	13	3	0.0019	0.0525	0.1671	0.05	0.008	0.001	0.06
14	2034	1	14	3	0.0019	0.0525	0.1671	0.05	0.008	0.001	0.06
15	2035	1	15	3	0.0019	0.0525	0.1671	0.05	0.008	0.001	0.06
16	2036	1	16	3	0.0019	0.0525	0.1671	0.05	0.008	0.001	0.06
17	2037	1	17	1	0.0019	0.0525	0.1671	0.01	0.0009	0.000	0.006
18	2038	1	18	1	0.0019	0.0525	0.1671	0.01	0.001	0.000	0.006
19	2039	1	19	1	0.0019	0.0525	0.1671	0.01	0.001	0.000	0.006
20	2040	1	20	1	0.0019	0.0525	0.1671	0.01	0.001	0.000	0.006
21	2041	1	21	1	0.0019	0.0525	0.1671	0.01	0.001	0.000	0.006
22	2042	1	22	1	0.0019	0.0525	0.1671	0.01	0.001	0.000	0.006
23	2043	1	23	1	0.0019	0.0525	0.1671	0.01	0.001	0.000	0.006
24	2044	1	24	1	0.0019	0.0525	0.1671	0.01	0.001	0.000	0.006
25	2045	1	25	1	0.0019	0.0525	0.1671	0.01	0.001	0.000	0.006
26	2046	1	26	1	0.0019	0.0525	0.1671	0.01	0.001	0.000	0.006
27	2047	1	27	1	0.0019	0.0525	0.1671	0.01	0.001	0.000	0.006
28	2048	1	28	1	0.0019	0.0525	0.1671	0.01	0.001	0.000	0.006
29	2049	1	29	1	0.0019	0.0525	0.1671	0.01	0.001	0.000	0.006
30	2050	1	30	1	0.0019	0.0525	0.1671	0.01	0.001	0.000	0.006
Total Increased Cancer Risk			**Total**					1.41	0.223	0.042	**1.7**

* Third trimester of pregnancy

Attachment 4: Screening Community Risk Calculations

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Risk & Hazard Stationary Source Inquiry Form

This form is required when users request stationary source data from BAAQMD

This form is to be used with the BAAQMD's Google Earth stationary source screening tables.

Click here for guidance on coducting risk & hazard screening, including roadways & freeways, refer to the District's Risk & Hazard Analysis flow chart.

Click here for District's Recommended Methods for Screening and Modeling Local Risks and Hazards document.

Table A: Requester Contact Information

Date of Request	**11/14/2018**
Contact Name	Mimi McNamara
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-040 X111
Email	mmcnamara@illingworthrodkin.com
Project Name	Catalina II
Address	1483 El Camino Real
City	Santa Clara
County	Santa Clara
Type (residential, commercial, mixed use, industrial, etc.)	Residential
Project Size (# of units or building square feet)	39 units
Comments:	

For Air District assistance, the following steps must be completed:

1. Complete all the contact and project information requested in Table A. Incomplete forms will not be processed. Please include a project site map.

2. Download and install the free program Google Earth, **http://www.google.com/earth/download/ge/,** and then download the county specific Google Earth stationary source application files from the District's website, **http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx.** The small points on the map represent stationary sources permitted by the District (Map A on right). These permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc. Click on a point to view the source's Information Table, including the name, location, and preliminary estimated cancer risk, hazard index, and PM2.5 concentration.

3. Find the project site in Google Earth by inputting the site's address in the Google Earth search box.

4. Identify stationary sources within at least a 1000ft radius of project site. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm the source's address location. Please report any mapping errors to the District.

5. List the stationary source information in Table B section only.

6. Note that a small percentage of the stationary sources have Health Risk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name (Map B on right). If HRSA values are presented, these values have already been modeled and cannot be adjusted further.

7. Email this completed form to District staff. District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.

Note that a public records request received for the same stationary source information will cancel the processing of your SSIF request.

Submit forms, maps, and questions to Areana Flores at 415-749-4616, or aflores@baaqmd.gov

Table B: Google Earth data

Distance from Receptor (feet) or MEI[1]	Facility Name	Address	Plant No.	Cancer Risk[2]	Hazard Risk[2]	$PM_{2.5}$[2]	Source No.[3]	Type of Source[4]	Fuel Code[5]	Status/Comments
	City of Santa Clara	1500 Warburton Avenue	16266	15.691057	0.0081	0.020446	S1	Generator	98	Use ICE Multiplier
	Owen Properties	1601 Civic Center Drive	17390	4.2981641	0.0066	0.005454	S1	Generator	98	Use ICE Multiplier
	~~Champion Auto Body & Repair~~	~~1486 Jefferson Street~~	~~8087~~		~~0.0002~~					New ownership
	One Stop Collision Center	1486 Jefferson Street	23391				S2	Auto Body Coating		Use Beta calculator, include OEHHA factor

Footnotes:

1. Maximally exposed individual
2. These Cancer Risk, Hazard Index, and PM2.5 columns represent the values in the Google Earth Plant Information Table.
3. Each plant may have multiple permits and sources.
4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.
5. Fuel codes: 98 = diesel, 189 = Natural Gas.
6. If a Health Risk Screening Assessment (HRSA) was completed for the source, the application number will be listed here.
7. The date that the HRSA was completed.
8. Engineer who completed the HRSA. For District purposes only.
9. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
10. The HRSA "Chronic Health" number represents the Hazard Index.
11. Further information about common sources:
    a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.
    b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard
    c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010. Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
    d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period,
    e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Mulitplier worksheet.
    f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
    g. This spray booth is considered to be insignificant.

Date last updated:
03/13/2018

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Risk & Hazard Stationary Source Inquiry Form

This form is required when users request stationary source data from BAAQMD

This form is to be used with the BAAQMD's Google Earth stationary source screening tables.

Click here for guidance on coducting risk & hazard screening, including roadways & freeways, refer to the District's Risk & Hazard Analysis flow chart.

Click here for District's Recommended Methods for Screening and Modeling Local Risks and Hazards document.

Table A: Requester Contact Information

Date of Request	**11/14/2018**
Contact Name	Mimi McNamara
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-040 X111
Email	mmcnamara@illingworthrodkin.com
Project Name	Catalina II
Address	1483 El Camino Real
City	Santa Clara
County	Santa Clara
Type (residential, commercial, mixed use, industrial, etc.)	Residential
Project Size (# of units or building square feet)	39 units
Comments:	

For Air District assistance, the following steps must be completed:

1. Complete all the contact and project information requested in Table A. Incomplete forms will not be processed. Please include a project site map.

2. Download and install the free program Google Earth, **http://www.google.com/earth/download/ge/,** and then download the county specific Google Earth stationary source application files from the District's website, **http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx.** The small points on the map represent stationary sources permitted by the District (Map A on right). These permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc. Click on a point to view the source's Information Table, including the name, location, and preliminary estimated cancer risk, hazard index, and PM2.5 concentration.

3. Find the project site in Google Earth by inputting the site's address in the Google Earth search box.

4. Identify stationary sources within at least a 1000ft radius of project site. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm the source's address location. Please report any mapping errors to the District.

5. List the stationary source information in Table B section only.

6. Note that a small percentage of the stationary sources have Health Risk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name (Map B on right). If HRSA values are presented, these values have already been modeled and cannot be adjusted further.

7. Email this completed form to District staff. District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.

Note that a public records request received for the same stationary source information will cancel the processing of your SSIF request.

Submit forms, maps, and questions to Areana Flores at 415-749-4616, or aflores@baaqmd.gov

Table B: Google Earth data

Distance from Receptor (feet) or MEI[1]	Facility Name	Address	Plant No.	Cancer Risk[2]	Hazard Risk[2]	$PM_{2.5}$[2]	Source No.[3]	Type of Source[4]	Fuel Code[5]	Status/Comments	Project Site: Distance Adjustment Multiplier	Project Site: Adjusted Cancer Risk Estimate	Project Site: Adjusted Hazard Risk	Project Site: Adjusted PM2.5	Construction MEI: Distance from Receptor (feet) or MEI[1]	Construction MEI: Distance Adjustment Multiplier	Construction MEI: Adjusted Cancer Risk Estimate	Construction MEI: Adjusted Hazard Risk	Construction MEI: Adjusted PM2.5
680	City of Santa Clara	1500 Warburton Avenue	16266	15.691057	0.0081	0.020446	S1	Generator	98	Use ICE Multiplier	0.08	1.26	0.0007	0.0016	1,000	0.04	0.63	0.0003	0.0008
700	Owen Properties	1601 Civic Center Drive	17390	4.2981641	0.0066	0.005454	S1	Generator	98	Use ICE Multiplier	0.08	0.34	0.0005	0.0004	1,000	0.04	0.17	0.0003	0.0002
	One Stop Collision Center	1486 Jefferson Street	23391		1.47E-03		S2	Auto Body Coating		Use Beta calculator, include OEHHA factor	No distance adjustment		0.0015		No distance adjustment			0.0015	

Footnotes:

1. Maximally exposed individual
2. These Cancer Risk, Hazard Index, and PM2.5 columns represent the values in the Google Earth Plant Information Table.
3. Each plant may have multiple permits and sources.
4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.
5. Fuel codes: 98 = diesel, 189 = Natural Gas.
6. If a Health Risk Screening Assessment (HRSA) was completed for the source, the application number will be listed here.
7. The date that the HRSA was completed.
8. Engineer who completed the HRSA. For District purposes only.
9. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
10. The HRSA "Chronic Health" number represents the Hazard Index.
11. Further information about common sources:
    a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.
    b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard
    c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010. Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
    d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period,
    e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Mulitplier worksheet.
    f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
    g. This spray booth is considered to be insignificant.

Date last updated:

How to Use the Distance Adjustment Multiplier Tool for Gasoline Dispensing Facilities (GDF)

This distance multiplier tool refines the screening values for cancer risk and chronic hazard index found in the District's Stationary Source Screening Analysis Tool to represent adjusted risk and hazard impacts that can be expected with farther distances from the source of emissions (GDF's).

1. Obtain the GDF cancer risk and/or chronic hazard index from the District's Stationary Source Screening Analysis tool for facilities where the Plant No. is preceded with a 'G'. If the distance to the nearest receptor is less than 20 meters, the distance adjustment multiplier table cannot be used and an air dispersion modeling analysis using site-specific information is needed to refine the cancer risk and/or chronic hazard index estimate.

2. Determine the shortest distance from the GDF to the nearest receptor.

3. In the table below, enter the cancer risk and/or chronic hazard index found in step 1 for the GDF in the row which aligns with the shortest distance from each GDF to the nearest receptor (found in step 2). If the shortest distance to the receptor falls between two distance values, select the multiplier corresponding to the smaller distance. For distances beyond 300 meters, use the multiplier 0.015. The resulting product is the adjusted cancer risk in a million or the adjusted chronic hazard index for the GDF.

Note: These distance adjustment multipliers may be used only for the screening level health risk values indicated in the District's Stationary Source Screening Analysis tool for gasoline dispensing facilities. This distance multiplier tool may not be used to adjust values from an HRA if an HRA for the facility was conducted.

Distance meters	Distance feet	Distance adjustment multiplier	Enter Cancer Risk	Adjusted Cancer Risk	Enter Chronic Hazard Index	Adjusted Chronic Hazard Index
20	66	1.000		0		0
25	82	0.728		0		0
30	98	0.559		0		0
35	115	0.445		0		0
40	131	0.365		0		0
45	148	0.305		0		0
50	164	0.260		0		0
55	180	0.225		0		0
60	197	0.197		0		0
65	213	0.174		0		0
70	230	0.155		0		0
75	246	0.139		0		0
80	262	0.126		0		0
85	279	0.114		0		0
90	295	0.104		0		0
95	312	0.096		0		0
100	328	0.088		0		0
105	344	0.082		0		0
110	361	0.076		0		0
115	377	0.071		0		0
120	394	0.066		0		0
125	410	0.062		0		0
130	426	0.058		0		0
135	443	0.055		0		0
140	459	0.052		0		0
145	476	0.049		0		0
150	492	0.046		0		0
155	508	0.044		0		0
160	525	0.042		0		0
165	541	0.040		0		0
170	558	0.038		0		0
175	574	0.036		0		0
180	590	0.034		0		0
185	607	0.033		0		0
190	623	0.031		0		0
195	640	0.030		0		0
200	656	0.029		0		0
205	672	0.028		0		0
210	689	0.027		0		0
215	705	0.026		0		0
220	722	0.025		0		0
225	738	0.024		0		0
230	754	0.023		0		0
235	771	0.022		0		0
240	787	0.022		0		0
245	804	0.021		0		0
250	820	0.020		0		0
255	836	0.020		0		0
260	853	0.019		0		0
265	869	0.018		0		0
270	886	0.018		0		0
275	902	0.017		0		0
280	918	0.017		0		0
285	935	0.016		0		0
290	951	0.016		0		0
295	968	0.015		0		0
300	984	0.015		0		0

How to Use the Distance Adjustment Multiplier Tool for Diesel Internal Combustion (IC) Engines

This distance multiplier tool refines the screening values for cancer risk and PM2.5 concentrations found in the District's Stationary Source Screening Analysis Tool for permitted facilities which contain only diesel IC engines, to represent adjusted risk and hazard impacts that can be expected with farther distances from the source of emissions.

1. Obtain the facility diesel IC engine(s) cancer risk and/or PM2.5 concentration from the District's Stationary Source Screening Analysis tool only for facilities where the source is listed as "generator." If the distance to the nearest receptor is less than 25 meters, the distance adjustment multiplier table cannot be used and an air dispersion modeling analysis using site-specific information is needed to refine the cancer risk, chronic hazard index or PM2.5 estimates.

2. Determine the shortest distance from each diesel IC engine to the nearest receptor. Select the shortest distance to receptor found.

3. In the table below, enter the cancer risk and/or PM2.5 concentration found in step 1 for the diesel IC engine in the row which aligns with the shortest distance from each diesel IC engine to the nearest receptor (found in step 2). If the shortest distance to the receptor falls between two distance values, select the multiplier corresponding to the smaller distance. For distances beyond 280 meters, use the multiplier 0.04. The resulting product is the adjusted cancer risk in a million or the adjusted PM2.5 concentration for the diesel IC engine

Note: This distance adjustment multiplier may be used only for the screening level health risk values indicated in the District's Stationary Source Screening Analysis tool for diesel IC engines. This distance multiplier tool may not be used to adjust values from an HRA if an HRA for the facility was conducted.

Note: This distance adjustment multiplier may also be used to adjust the screening values for chronic hazard index found in the District's Stationary Source Screening Analysis Tool for facilities with only diesel IC engines.

Distance (meters)	Distance (feet)	Distance Adjustment Multiplier	Enter Cancer Risk Estimate	Adjusted Cancer Risk Estimate	Enter PM2.5 Concentration	Adjusted PM2.5 Concentration
25	82	0.85		0		0
30	98.4	0.73		0		0
35	115	0.64		0		0
40	131	0.58		0		0
50	164	0.5		0		0
60	197	0.41		0		0
70	230	0.31		0		0
80	262	0.28		0		0
90	295	0.25		0		0
100	328	0.22		0		0
110	361	0.18		0		0
120	394	0.16		0		0
130	426	0.15		0		0
140	459	0.14		0		0
150	492	0.12		0		0
160	525	0.1		0		0
180	590	0.09		0		0
200	656	0.08		0		0
220	722	0.07		0		0
240	787	0.06		0		0
260	853	0.05		0		0
280	918	0.04		0		0

BAAQMD Risk and Hazards Emissions Screening Calculator Instructions (Beta Version)

Based on emissions data provided by BAAQMD, this calculator will estimate screening-level cancer risk, PM2.5 concentrations, and non-cancer acute/chronic indices. This method should only be used for permitted facilites where screening-level risks have not already been calculated by BAAQMD and BAAQMD Health Risk Screening Assessments have not been completed.

BAAQMD staff will provide emissions information for each requested permitted facility. If a facility contains more than one permitted source, the plant's total emissions can be used, which BAAQMD staff will provide.

Below, note that there are individual worksheets for estimating cancer risk, non-cancer chronic hazard, non-cancer acute hazard and PM2.5 concentrations. To calculate risks, etc., enter daily emissions in each worksheet in column B for each chemical in the emissions printout. Sum the individual risk and hazard from each chemical to determine the total risks and hazards at the facility.

EXAMPLE:

BAY AREA AIR QUALITY MANAGEMENT DISTRICT Printed: DEC 22, 2011
DETAIL POLLUTANTS - ABATED
MOST RECENT P/O APPROVED (2011)

Plant Name: Example 1

S# SOURCE NAME MATERIAL THROUGHPUT	SOURCE CODE DATE	POLLUTANT	CODE	LBS/DAY

This plant contains 4 permitted sources. These source emissions are combined and presented in the plant total:

PLANT TOTAL:

Daily emissions

Lbs/day	Pollutant		
Benzene	41	1.26E-03
Formaldehyde	124	1.04E-04
Organics (part not specel	990	6.06E-02
Arsenic (all)	1030	1.09E-06
Beryllium (all) pollutant	1040	6.41E-07
Cadmium	1070	2.73E-06
Chromium (hexavalent)	1095	5.65E-08
Lead (all) pollutant	1140	2.32E-06
Manganese	1160	3.64E-06
Nickel pollutant	1180	4.42E-05
Mercury (all) pollutant	1190	7.73E-07
Diesel Engine Exhaust Part	1350	6.31E-02
PAH's (non-speciated)	1840	5.77E-06
Nitrous Oxide (N2O)	2030	3.36E-04
Nitrogen Oxides (part not	2990	8.84E-01
Sulfur Dioxide (SO2)	3990	4.10E-04
Carbon Monoxide (CO) pollu	4990	1.92E-01
Carbon Dioxide, non-biogen	6960	4.20E+01
Methane (CH4)	6970	1.68E-03

Pollutant Name	Emission/lbs per day	Cancer Risk
ARSENIC	1.09E-06	5.50E-08
BENZENE	1.26E-03	1.22E-07
BERYLLIUM	6.41E-07	4.98E-09
CADMIUM	2.73E-06	3.79E-08
CHROMIUM	5.65E-08	2.67E-08
DIESEL PM	6.31E-02	6.70E-05
FORMALDEHYDE	1.04E-04	2.11E-09
LEAD	2.32E-06	2.65E-10
NICKEL	4.42E-05	3.73E-08
PAH'S	5.77E-06	5.77E-06
TOTAL:		**7.31E-05**

Using this screening approach, the cancer risk associated with this facility is estimated to be 7.31E-05, also expressed as **73 in a million**. If the facility contains only diesel back-up engines, the distance multiplier can be used to adjust the estimated cancer risk.

Note: Not all of the chemicals being emitted by the plant in this example are associated with cancer risk, therefore those chemicals are not included in the cancer risk estimation. Similarly, not all of the chemicals emitted by the plant in this example are associated with acute or chronic hazards.

Plug in the emissions in column B in the remaining tabs in the same fashion to estimate chronic and acute hazards, and PM2.5 concentrations.

Notes: Created 7/11/2012. Version 1.3 Beta. This calculator will create screening level values. More detailed modeling methods will result in more accurate values. For questions and comments contact Alison Kirk at akirk@baaqmd.gov.

Plant #: 23391
Plant Name: One Stop Collision Center
Number of Sources: 1

Pollutant Name	Emissions/lbs per day	Cancer Risk (in millions)
ACETALDEHYDE		0.00E+00
ACETAMIDE		0.00E+00
ACRYLAMIDE		0.00E+00
ACRYLONITRILE		0.00E+00
ALLYL CHLORIDE		0.00E+00
2-AMINOANTHRAQUINONE		0.00E+00
ANILINE		0.00E+00
ARSENIC AND COMPOUNDS (INORGANIC)[1,2]		0.00E+00
ASBESTOS[3]		0.00E+00
BENZENE[1]		0.00E+00
BENZIDINE (AND ITS SALTS) values also apply to:		0.00E+00
Benzidine based dyes		0.00E+00
Direct Black 38		0.00E+00
Direct Blue 6		0.00E+00
Direct Brown 95 (technical grade)		0.00E+00
BENZYL CHLORIDE		0.00E+00
BERYLLIUM AND COMPOUNDS[2]		0.00E+00
BIS(2-CHLOROETHYL)ETHER (Dichloroethyl ether)		0.00E+00
BIS(CHLOROMETHYL)ETHER		0.00E+00
POTASSIUM BROMATE		0.00E+00
1,3-BUTADIENE		0.00E+00
CADMIUM AND COMPOUNDS[2]		0.00E+00
CARBON TETRACHLORIDE[1] (Tetrachloromethane)		0.00E+00
CHLORINATED PARAFFINS		0.00E+00
4-CHLORO-O-PHENYLENEDIAMINE		0.00E+00
CHLOROFORM[1]		0.00E+00
PENTACHLOROPHENOL		0.00E+00
2,4,6-TRICHLOROPHENOL		0.00E+00
p-CHLORO-o-TOLUIDINE		0.00E+00
CHROMIUM 6+2		0.00E+00
Barium chromate2		0.00E+00
Calcium chromate2		0.00E+00
Lead chromate2		0.00E+00
Sodium dichromate2		0.00E+00
Strontium chromate2		0.00E+00
CHROMIC TRIOXIDE (as chromic acid mist)		0.00E+00
p-CRESIDINE		0.00E+00
CUPFERRON		0.00E+00
2,4-DIAMINOANISOLE		0.00E+00
2,4-DIAMINOTOLUENE		0.00E+00
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)		0.00E+00
1,4-DICHLOROBENZENE		0.00E+00
3,3-DICHLOROBENZIDINE		0.00E+00
1,1,-DICHLOROETHANE (Ethylidene dichloride)		0.00E+00
DI(2-ETHYLHEXYL)PHTHALATE (DEHP)		0.00E+00
p-DIMETHYLAMINOAZOBENZENE		0.00E+00
2,4-DINITROTOLUENE		0.00E+00
1,4-DIOXANE (1,4-Diethylene dioxide)		0.00E+00
EPICHLOROHYDRIN (1-Chloro-2,3-epoxypropane)		0.00E+00
ETHYL BENZENE		0.00E+00
ETHYLENE DIBROMIDE (1,2-Dibromoethane)		0.00E+00
ETHYLENE DICHLORIDE (1,2-Dichloroethane)		0.00E+00
ETHYLENE OXIDE (1,2-Epoxyethane)		0.00E+00
ETHYLENE THIOUREA		0.00E+00
FORMALDEHYDE		0.00E+00
HEXACHLOROBENZENE		0.00E+00
HEXACHLOROCYCLOHEXANES (mixed or technical grade)		0.00E+00
alpha-HEXACHLOROCYCLOHEXANE		0.00E+00
beta- HEXACHLOROCYCLOHEXANE		0.00E+00
gamma-HEXACHLOROCYCLOHEXANE (Lindane)		0.00E+00
HYDRAZINE		0.00E+00
LEAD AND COMPOUNDS 2,4 (inorganic) values also apply to:		0.00E+00
Lead acetate2		0.00E+00
Lead phosphate2		0.00E+00
Lead subacetate2		0.00E+00
METHYL tertiary-BUTYL ETHER		0.00E+00
4,4'-METHYLENE BIS (2-CHLOROANILINE) (MOCA)		0.00E+00
METHYLENE CHLORIDE (Dichloromethane)		0.00E+00
4,4'-METHYLENE DIANILINE (AND ITS DICHLORIDE)		0.00E+00
MICHLER'S KETONE (4,4'-Bis(dimethylamino)benzophenone)		0.00E+00
N-NITROSODI-n-BUTYLAMINE		0.00E+00
N-NITROSODI-n-PROPYLAMINE		0.00E+00
N-NITROSODIETHYLAMINE		0.00E+00
N-NITROSODIMETHYLAMINE		0.00E+00
N-NITROSODIPHENYLAMINE		0.00E+00
N-NITROSO-N-METHYLETHYLAMINE		0.00E+00
N-NITROSOMORPHOLINE		0.00E+00
N-NITROSOPIPERIDINE		0.00E+00
N-NITROSOPYRROLIDINE		0.00E+00
NICKEL AND COMPOUNDS2 (values also apply to:)		0.00E+00
Nickel acetate2		0.00E+00
Nickel carbonate2		0.00E+00
Nickel carbonyl2		0.00E+00
Nickel hydroxide2		0.00E+00
Nickelocene2		0.00E+00
NICKEL OXIDE2		0.00E+00
Nickel refinery dust from the pyrometallurgical process2		0.00E+00
Nickel subsulfide2		0.00E+00
p-NITROSODIPHENYLAMINE		0.00E+00
PARTICULATE EMISSIONS FROM DIESEL-FUELED ENGINES		0.00E+00
PERCHLOROETHYLENE (Tetrachloroethylene)		0.00E+00
PCB (POLYCHLORINATED BIPHENYLS) [low risk] 2,6		0.00E+00
PCB (POLYCHLORINATED BIPHENYLS) [high risk] 2,6		0.00E+00
POLYCHLORINATED DIBENZO-P-DIOXINS (PCDD)(AS 2,3,7,8-PCDD EQUIV) 2,7		0.00E+00
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN2,7		0.00E+00
POLYCHLORINATED DIBENZOFURANS (PCDF)(AS 2,3,7,8-PCDD EQUIV) 2,7		0.00E+00
2,3,7,8-TETRACHLORODIBENZOFURAN2,7		0.00E+00
POLYCYCLIC AROMATIC HYDROCARBON2 (PAH) (AS B(a)P-EQUIV)5		0.00E+00
BENZO(A)PYRENE2,5		0.00E+00
NAPHTHALENE		0.00E+00
1,3-PROPANE SULTONE		0.00E+00
PROPYLENE OXIDE		0.00E+00
1,1,2,2-TETRACHLOROETHANE		0.00E+00
THIOACETAMIDE		0.00E+00
Toluene diisocyantates		0.00E+00
TOLUENE-2,4-DIISOCYANATE		0.00E+00
TOLUENE-2,6-DIISOCYANATE		0.00E+00
1,1,2-TRICHLOROETHANE (Vinyl trichloride)		0.00E+00
TRICHLOROETHYLENE		0.00E+00
URETHANE (Ethyl carbamate)		0.00E+00
VINYL CHLORIDE (Chloroethylene)		0.00E+00
	TOTAL:	0.00E+00

Plant #: 23391
Plant Name: One Stop Collision Center
Number of Sources: 1

Pollutant Name	Emission/lbs per day	Chronic Hazard
ACETALDEHYDE	0	0
ACROLEIN		0
ACRYLONITRILE		0
AMMONIA		0
ARSENIC AND COMPOUNDS (INORGANIC)1,2		0
ARSINE		0
BENZENE1		0
BERYLLIUM AND COMPOUNDS2		0
1,3-BUTADIENE		0
CADMIUM AND COMPOUNDS2		0
CARBON DISULFIDE1		0
CARBON TETRACHLORIDE1 (Tetrachloromethane)		0
CHLORINE		0
CHLORINE DIOXIDE		0
CHLOROBENZENE		0
CHLOROFORM1		0
2,3,4,6-Tetrachlorophenol		0
CHLOROPICRIN		0
CHROMIUM 6+2		0
Barium chromate2		0
Calcium chromate2		0
Lead chromate2		0
Sodium dichromate2		0
Strontium chromate2		0
CHROMIC TRIOXIDE (as chromic acid mist)		0
CRESOLS		0
M-CRESOL		0
O-CRESOL		0
P-CRESOL		0
Cyanide And Compounds (inorganic)		0
HYDROGEN CYANIDE (Hydrocyanic acid)		0
1,4-DICHLOROBENZENE		0
DIETHANOLAMINE		0
DIMETHYLAMINE		0
N,N-DIMETHYL FORMAMIDE		0
1,4-DIOXANE (1,4-Diethylene dioxide)		0
EPICHLOROHYDRIN (1-Chloro-2,3-epoxypropane)		0
1,2-EPOXYBUTANE		0
ETHYL BENZENE		0
ETHYL CHLORIDE (Chloroethane)		0
ETHYLENE DIBROMIDE (1,2-Dibromoethane)		0
ETHYLENE DICHLORIDE (1,2-Dichloroethane)		0
ETHYLENE GLYCOL	2.18E-01	0.001028839
ETHYLENE OXIDE (1,2-Epoxyethane)		0
Fluorides		0
HYDROGEN FLUORIDE (Hydrofluoric acid)		0
FORMALDEHYDE		0
GASOLINE VAPORS		0
GLUTARALDEHYDE		0
ETHYLENE GLYCOL ETHYL ETHER – EGEE1		0
ETHYLENE GLYCOL ETHYL ETHER ACETATE – EGEEA1		0
ETHYLENE GLYCOL METHYL ETHER – EGME1		0
ETHYLENE GLYCOL METHYL ETHER ACETATE – EGMEA		0
n-HEXANE		0
HYDRAZINE		0
HYDROCHLORIC ACID (Hydrogen chloride)		0
HYDROGEN SULFIDE		0
ISOPHORONE		0
ISOPROPYL ALCOHOL (Isopropanol)		0
MALEIC ANHYDRIDE		0
MANGANESE AND COMPOUNDS		0
MERCURY AND COMPOUNDS (INORGANIC) values also apply to:		0
Mercuric chloride		0
METHANOL		0
METHYL BROMIDE (Bromomethane)		0
METHYL tertiary-BUTYL ETHER		0
METHYL CHLOROFORM (1,1,1-Trichloroethane)		0
METHYL ISOCYANATE		0
METHYLENE CHLORIDE (Dichloromethane)		0
4,4'-METHYLENE DIANILINE (AND ITS DICHLORIDE)		0
METHYLENE DIPHENYL ISOCYANATE		0
NICKEL AND COMPOUNDS2 (values also apply to:)		0
Nickel acetate2		0
Nickel carbonate2		0
Nickel carbonyl2		0
Nickel hydroxide2		0
Nickelocene2		0
NICKEL OXIDE2		0
Nickel refinery dust from the pyrometallurgical process2		0
Nickel subsulfide2		0
NITROGEN DIOXIDE		0
PARTICULATE EMISSIONS FROM DIESEL-FUELED ENGINES		0
PERCHLOROETHYLENE (Tetrachloroethylene)		0
PHENOL		0
PHOSPHINE		0
PHOSPHORIC ACID		0
PHOSPHORUS (WHITE)		0
PHTHALIC ANHYDRIDE		0
POLYCHLORINATED DIBENZO-P-DIOXINS (PCDD)(AS 2,3,7,8-PCDD EQUIV) 2,7		0
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,4,6,7,8,9-OCTACHLORODIBENZO-P-DIOXIN2,7		0
POLYCHLORINATED DIBENZOFURANS (PCDF)(AS 2,3,7,8-PCDD EQUIV) 2,7		0
2,3,7,8-TETRACHLORODIBENZOFURAN2,7		0
1,2,3,7,8-PENTACHLORODIBENZOFURAN2,7		0
2,3,4,7,8-PENTACHLORODIBENZOFURAN2,7		0
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN2,7		0
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN2,7		0
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN2,7		0
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN2,7		0
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN2,7		0
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN2,7		0
1,2,3,4,6,7,8,9-OCTACHLORODIBENZOFURAN2,7		0
NAPHTHALENE		0
PROPYLENE (PROPENE)		0
PROPYLENE GLYCOL MONOMETHYL ETHER		0
PROPYLENE OXIDE		0
SELENIUM AND COMPOUNDS		0
Selenium sulfide		0
SILICA (Crystalline, Respirable)		0
STYRENE		0
SULFUR DIOXIDE		0
SULFURIC ACID AND OLEUM		0
SULFURIC ACID		0
SULFUR TRIOXIDE		0
OLEUM		0
TOLUENE		0
Toluene diisocyantates		0
TOLUENE-2,4-DIISOCYANATE		0
TOLUENE-2,6-DIISOCYANATE		0
TRICHLOROETHYLENE		0
TRIETHYLAMINE		0
VINYL ACETATE		0
VINYLIDENE CHLORIDE (1,1-Dichloroethylene)		0
XYLENES (mixed isomers)	1.65E-01	0.000444976
m-XYLENE		0
o-XYLENE		0
p-XYLENE		0
	TOTAL:	1.47E-03

Plant #: 23391
Plant Name: One Stop Collision Center
Number of Sources: 1

Pollutant Name	Emission/lbs per day	Acute Hazard
ACETALDEHYDE	0	0
ACROLEIN		0
ACRYLIC ACID		0
AMMONIA		0
ARSENIC AND COMPOUNDS (INORGANIC)1,2		0
ARSINE		0
BENZENE1		0
BENZYL CHLORIDE		0
CARBON DISULFIDE1		0
CARBON MONOXIDE		0
CARBON TETRACHLORIDE1 (Tetrachloromethane)		0
CHLORINE		0
CHLOROFORM1		0
CHLOROPICRIN		0
COPPER AND COMPOUNDS		0
Cyanide And Compounds (inorganic)		0
HYDROGEN CYANIDE (Hydrocyanic acid)		0
1,4-DIOXANE (1,4-Diethylene dioxide)		0
EPICHLOROHYDRIN (1-Chloro-2,3-epoxypropane)		0
Fluorides		0
HYDROGEN FLUORIDE (Hydrofluoric acid)		0
FORMALDEHYDE		0
ETHYLENE GLYCOL BUTYL ETHER – EGBE	7.76E-02	0.000104637
ETHYLENE GLYCOL ETHYL ETHER – EGEE1		0
ETHYLENE GLYCOL ETHYL ETHER ACETATE – EGEEA1		0
ETHYLENE GLYCOL METHYL ETHER – EGME1		0
HYDROCHLORIC ACID (Hydrogen chloride)		0
HYDROGEN SULFIDE		0
ISOPROPYL ALCOHOL (Isopropanol)		0
MERCURY AND COMPOUNDS (INORGANIC) values also apply to:		0
Mercuric chloride		0
METHANOL		0
METHYL BROMIDE (Bromomethane)		0
METHYL CHLOROFORM (1,1,1-Trichloroethane)		0
METHYL ETHYL KETONE (2-Butanone)		0
METHYLENE CHLORIDE (Dichloromethane)		0
NICKEL AND COMPOUNDS2 (values also apply to:)		0
Nickel acetate2		0
Nickel carbonate2		0
Nickel carbonyl2		0
Nickel hydroxide2		0
Nickelocene2		0
NICKEL OXIDE2		0
Nickel refinery dust from the pyrometallurgical process2		0
Nickel subsulfide2		0
NITRIC ACID		0
OZONE		0
PROPYLENE OXIDE		0
HYDROGEN SELENIDE		0
SODIUM HYDROXIDE		0
STYRENE		0
SULFATES		0
SULFUR DIOXIDE		0
SULFURIC ACID AND OLEUM		0
SULFURIC ACID		0
SULFUR TRIOXIDE		0
OLEUM		0
TOLUENE		0
TRIETHYLAMINE		0
Vanadium (fume or dust)		0
VANADIUM PENTOXIDE		0
VINYL CHLORIDE (Chloroethylene)		0
XYLENES (mixed isomers)	1.65E-01	0.000141583
m-XYLENE		0
o-XYLENE		0
p-XYLENE		0
	TOTAL:	2.46E-04

Plant #: 23391

Plant Name: One Stop Collision Center

Number of Sources: 1

Diesel PM Concentrations	Emissions (lbs/day)	PM2.5 Concentration (ug/m3)
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
TOTAL:		0

Distance meters	Distance feet	Distance adjustment multiplier	Enter Risk or Hazard	Adjusted Risk or Hazard
20	66	1.000		0
25	82	0.728		0
30	98	0.559		0
35	115	0.445		0
40	131	0.365		0
45	148	0.305		0
50	164	0.260		0
55	180	0.225		0
60	197	0.197		0
65	213	0.174		0
70	230	0.155		0
75	246	0.139		0
80	262	0.126		0
85	279	0.114		0
90	295	0.104		0
95	312	0.096		0
100	328	0.088		0
105	344	0.082		0
110	361	0.076		0
115	377	0.071		0
120	394	0.066		0
125	410	0.062		0
130	426	0.058		0
135	443	0.055		0
140	459	0.052		0
145	476	0.049		0
150	492	0.046		0
155	508	0.044		0
160	525	0.042		0
165	541	0.040		0
170	558	0.038		0
175	574	0.036		0
180	590	0.034		0
185	607	0.033		0
190	623	0.031		0
195	640	0.030		0
200	656	0.029		0
205	672	0.028		0
210	689	0.027		0
215	705	0.026		0
220	722	0.025		0
225	738	0.024		0
230	754	0.023		0
235	771	0.022		0
240	787	0.022		0
245	804	0.021		0
250	820	0.020		0
255	836	0.020		0
260	853	0.019		0
265	869	0.018		0
270	886	0.018		0
275	902	0.017		0
280	918	0.017		0
285	935	0.016		0
290	951	0.016		0
295	968	0.015		0
300	984	0.015		0

Distance meters	Distance feet	Distance adjustment multiplier	Enter Risk or Hazard	Adjusted Risk or Hazard	Enter PM2.5 Concentration	Adjusted PM2.5 Concentration
25	82	0.85		0		0
30	98	0.73		0		0
35	115	0.64		0		0
40	131	0.58		0		0
50	164	0.5		0		0
60	197	0.41		0		0
70	230	0.31		0		0
80	262	0.28		0		0
90	295	0.25		0		0
100	328	0.22		0		0
110	361	0.18		0		0
120	394	0.16		0		0
130	426	0.15		0		0
140	459	0.14		0		0
150	492	0.12		0		0
160	525	0.1		0		0
180	590	0.09		0		0
200	656	0.08		0		0
220	722	0.07		0		0
240	787	0.06		0		0
260	853	0.05		0		0
280	918	0.04		0		0

Attachment 5: Construction Health Risk Calculations

Catalina II Residential Development, Santa Clara, CA

DPM Emissions and Modeling Emission Rates

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2019-2020	Construction	0.0384	CON_DPM	76.7	0.02335	2.94E-03	7,287	4.04E-07

Construction Hours

hr/day =	9	(7am - 4pm)
days/yr =	365	
hours/year =	3285	

PM2.5 Fugitive Dust Emissions for Modeling

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	(lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2019-2020	Construction	CON_FUG	0.01234	24.7	0.00751	9.47E-04	7,287	1.30E-07

Construction Hours

hr/day =	9	(7am - 4pm)
days/yr =	365	
hours/year =	3285	

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2019-2020	Construction	0.0041	CON_DPM	8.3	0.00252	3.18E-04	7,287	4.36E-08

Construction Hours

hr/day =	10	(7am - 4pm)
days/yr =	365	
hours/year =	3285	

PM2.5 Fugitive Dust Construction Emissions for Modeling - With Mitigation

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	(lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2019-2020	Construction	CON_FUG	0.00344	6.9	0.00209	2.64E-04	7,287	3.62E-08

Construction Hours

hr/day =	9	(7am - 4pm)
days/yr =	365	
hours/year =	3285	

Catalina II Residential Development, Santa Clara, CA
Construction Health Impact Summary

Maximum Impacts at MEI Location - Unmitigated

Emissions Year	Maximum Concentrations		Cancer Risk (per million)		Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM10/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Infant/Child	Adult	(-)	($\mu g/m^3$)
2019-2020	0.1781	0.0514	**29.3**	**0.5**	**0.036**	**0.23**

Maximum Impacts at MEI Location - With Mitigation

Emissions Year	Maximum Concentrations		Cancer Risk (per million)		Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM10/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Infant/Child	Adult	(-)	($\mu g/m^3$)
2019-2020	0.0192	0.0143	**3.2**	**0.1**	**0.004**	**0.03**

Catalina II Residential Development, Santa Clara, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 4.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child				Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 9**	**2 - 16**	**16 - 30**
Parameter					
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum	
				DPM Conc (ug/m3)	Age	Infant/Child Cancer		Modeled DPM Conc (ug/m3)	Age	Adult Cancer		
Exposure Year	Exposure Duration (years)	Age	Year	Annual	Sensitivity Factor	Risk (per million)	Year	Annual	Sensitivity Factor	Risk (per million)	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2019-2020	0.1781	10	29.25	2019-2020	0.1781	1	0.51	0.0514	0.229
2	1	1 - 2	2020		10	0.00	2020		1	0.00		
3	1	2 - 3	2021		3	0.00	2021		1	0.00		
4	1	3 - 4	2022		3	0.00	2022		1	0.00		
5	1	4 - 5	2023		3	0.00	2023		1	0.00		
6	1	5 - 6	2024		3	0.00	2024		1	0.00		
7	1	6 - 7	2025		3	0.00	2025		1	0.00		
8	1	7 - 8	2026		3	0.00	2026		1	0.00		
9	1	8 - 9	2027		3	0.00	2027		1	0.00		
10	1	9 - 10	2028		3	0.00	2028		1	0.00		
11	1	10 - 11	2029		3	0.00	2029		1	0.00		
12	1	11 - 12	2030		3	0.00	2030		1	0.00		
13	1	12 - 13	2031		3	0.00	2031		1	0.00		
14	1	13 - 14	2032		3	0.00	2032		1	0.00		
15	1	14 - 15	2033		3	0.00	2033		1	0.00		
16	1	15 - 16	2034		3	0.00	2034		1	0.00		
17	1	16-17	2035		1	0.00	2035		1	0.00		
18	1	17-18	2036		1	0.00	2036		1	0.00		
19	1	18-19	2037		1	0.00	2037		1	0.00		
20	1	19-20	2038		1	0.00	2038		1	0.00		
21	1	20-21	2039		1	0.00	2039		1	0.00		
22	1	21-22	2040		1	0.00	2040		1	0.00		
23	1	22-23	2041		1	0.00	2041		1	0.00		
24	1	23-24	2042		1	0.00	2042		1	0.00		
25	1	24-25	2043		1	0.00	2043		1	0.00		
26	1	25-26	2044		1	0.00	2044		1	0.00		
27	1	26-27	2045		1	0.00	2045		1	0.00		
28	1	27-28	2046		1	0.00	2046		1	0.00		
29	1	28-29	2047		1	0.00	2047		1	0.00		
30	1	29-30	2048		1	0.00	2048		1	0.00		
Total Increased Cancer Risk						**29.3**				**0.51**		

* Third trimester of pregnancy

Catalina II Residential Development, Santa Clara, CA - Construction Impacts - With Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 4.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child				Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 9**	**2 - 16**	**16 - 30**
Parameter					
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information			Infant/Child	Adult - Exposure Information			Adult	Maximum	
							Modeled					
Exposure	Exposure Duration		DPM Conc (ug/m3)		Age Sensitivity	Cancer Risk	DPM Conc (ug/m3)		Age Sensitivity	Cancer Risk	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	PM2.5	PM2.5
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2019	0.0192	10	3.16	2019	0.0192	1	0.06	0.0143	0.034
2	1	1 - 2	2020		10	0.00	2020			0.00		
3	1	2 - 3	2021		3	0.00	2021			0.00		
4	1	3 - 4	2022		3	0.00	2022			0.00		
5	1	4 - 5	2023		3	0.00	2023			0.00		
6	1	5 - 6	2024		3	0.00	2024			0.00		
7	1	6 - 7	2025		3	0.00	2025			0.00		
8	1	7 - 8	2026		3	0.00	2026			0.00		
9	1	8 - 9	2027		3	0.00	2027			0.00		
10	1	9 - 10	2028		3	0.00	2028			0.00		
11	1	10 - 11	2029		3	0.00	2029			0.00		
12	1	11 - 12	2030		3	0.00	2030			0.00		
13	1	12 - 13	2031		3	0.00	2031			0.00		
14	1	13 - 14	2032		3	0.00	2032			0.00		
15	1	14 - 15	2033		3	0.00	2033			0.00		
16	1	15 - 16	2034		3	0.00	2034			0.00		
17	1	16-17	2035		1	0.00	2035			0.00		
18	1	17-18	2036		1	0.00	2036			0.00		
19	1	18-19	2037		1	0.00	2037			0.00		
20	1	19-20	2038		1	0.00	2038			0.00		
21	1	20-21	2039		1	0.00	2039			0.00		
22	1	21-22	2040		1	0.00	2040			0.00		
23	1	22-23	2041		1	0.00	2041			0.00		
24	1	23-24	2042		1	0.00	2042			0.00		
25	1	24-25	2043		1	0.00	2043			0.00		
26	1	25-26	2044		1	0.00	2044			0.00		
27	1	26-27	2045		1	0.00	2045			0.00		
28	1	27-28	2046		1	0.00	2046			0.00		
29	1	28-29	2047		1	0.00	2047			0.00		
30	1	29-30	2048		1	0.00	2048			0.00		
Total Increased Cancer Risk						**3.2**				**0.06**		

* Third trimester of pregnancy

Catalina II Residential Development, Santa Clara, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child				Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 9**	**2 - 16**	**16 - 30**
Parameter					
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information					
							Modeled				Maximum	
Exposure	Exposure Duration		DPM Conc (ug/m3)		Age Sensitivity	Infant/Child Cancer Risk	DPM Conc (ug/m3)		Age Sensitivity	Adult Cancer Risk	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	PM2.5	PM2.5
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2019-2020	0.1246	10	20.47	2019-2020	0.1246	1	0.36	0.1157	0.235
2	1	1 - 2	2020		10	0.00	2020		1	0.00		
3	1	2 - 3	2021		3	0.00	2021		1	0.00		
4	1	3 - 4	2022		3	0.00	2022		1	0.00		
5	1	4 - 5	2023		3	0.00	2023		1	0.00		
6	1	5 - 6	2024		3	0.00	2024		1	0.00		
7	1	6 - 7	2025		3	0.00	2025		1	0.00		
8	1	7 - 8	2026		3	0.00	2026		1	0.00		
9	1	8 - 9	2027		3	0.00	2027		1	0.00		
10	1	9 - 10	2028		3	0.00	2028		1	0.00		
11	1	10 - 11	2029		3	0.00	2029		1	0.00		
12	1	11 - 12	2030		3	0.00	2030		1	0.00		
13	1	12 - 13	2031		3	0.00	2031		1	0.00		
14	1	13 - 14	2032		3	0.00	2032		1	0.00		
15	1	14 - 15	2033		3	0.00	2033		1	0.00		
16	1	15 - 16	2034		3	0.00	2034		1	0.00		
17	1	16-17	2035		1	0.00	2035		1	0.00		
18	1	17-18	2036		1	0.00	2036		1	0.00		
19	1	18-19	2037		1	0.00	2037		1	0.00		
20	1	19-20	2038		1	0.00	2038		1	0.00		
21	1	20-21	2039		1	0.00	2039		1	0.00		
22	1	21-22	2040		1	0.00	2040		1	0.00		
23	1	22-23	2041		1	0.00	2041		1	0.00		
24	1	23-24	2042		1	0.00	2042		1	0.00		
25	1	24-25	2043		1	0.00	2043		1	0.00		
26	1	25-26	2044		1	0.00	2044		1	0.00		
27	1	26-27	2045		1	0.00	2045		1	0.00		
28	1	27-28	2046		1	0.00	2046		1	0.00		
29	1	28-29	2047		1	0.00	2047		1	0.00		
30	1	29-30	2048		1	0.00	2048		1	0.00		
Total Increased Cancer Risk						**20.5**				**0.36**		

* Third trimester of pregnancy

Catalina II Residential Development, Santa Clara, CA - Construction Impacts - With Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
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Values

	Infant/Child				Adult
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DBR* =	361	1090	631	572	261
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AT =	70	70	70	70	70
FAH =	1.00	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information			Infant/Child	Adult - Exposure Information			Adult	Maximum	
							Modeled					
Exposure	Exposure Duration		DPM Conc (ug/m3)		Age Sensitivity	Cancer Risk	DPM Conc (ug/m3)		Age Sensitivity	Cancer Risk	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	PM2.5	PM2.5
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2019	0.0135	10	2.21	2019	0.0135	1	0.04	0.0135	0.027
2	1	1 - 2	2020		10	0.00	2020			0.00		
3	1	2 - 3	2021		3	0.00	2021			0.00		
4	1	3 - 4	2022		3	0.00	2022			0.00		
5	1	4 - 5	2023		3	0.00	2023			0.00		
6	1	5 - 6	2024		3	0.00	2024			0.00		
7	1	6 - 7	2025		3	0.00	2025			0.00		
8	1	7 - 8	2026		3	0.00	2026			0.00		
9	1	8 - 9	2027		3	0.00	2027			0.00		
10	1	9 - 10	2028		3	0.00	2028			0.00		
11	1	10 - 11	2029		3	0.00	2029			0.00		
12	1	11 - 12	2030		3	0.00	2030			0.00		
13	1	12 - 13	2031		3	0.00	2031			0.00		
14	1	13 - 14	2032		3	0.00	2032			0.00		
15	1	14 - 15	2033		3	0.00	2033			0.00		
16	1	15 - 16	2034		3	0.00	2034			0.00		
17	1	16-17	2035		1	0.00	2035			0.00		
18	1	17-18	2036		1	0.00	2036			0.00		
19	1	18-19	2037		1	0.00	2037			0.00		
20	1	19-20	2038		1	0.00	2038			0.00		
21	1	20-21	2039		1	0.00	2039			0.00		
22	1	21-22	2040		1	0.00	2040			0.00		
23	1	22-23	2041		1	0.00	2041			0.00		
24	1	23-24	2042		1	0.00	2042			0.00		
25	1	24-25	2043		1	0.00	2043			0.00		
26	1	25-26	2044		1	0.00	2044			0.00		
27	1	26-27	2045		1	0.00	2045			0.00		
28	1	27-28	2046		1	0.00	2046			0.00		
29	1	28-29	2047		1	0.00	2047			0.00		
30	1	29-30	2048		1	0.00	2048			0.00		
Total Increased Cancer Risk						**2.2**				**0.04**		

* Third trimester of pregnancy