Appendix C – Air Quality/GHG Assessment

PACIFIC MALL PROJECT
DRAFT AIR QUALITY AND GREENHOUSE GAS EMISSIONS ASSESSMENT
MILPITAS, CALIFORNIA

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Introduction

This report addresses air quality and greenhouse gas emissions impacts associated with the proposed Pacific Mall project in the City of Milpitas (City). The project would involve the demolition of four large commercial buildings on a 37.9-acre site and the construction a 12-story, 250 room hotel with ground floor and second floor retail, second floor hotel amenities. Approximately 292,186 square feet (s.f.) of new retail is proposed and the site is currently developed with 267,606 s.f. of commercial. The project proposes to demolish 139,710 s.f. of buildings on-site, resulting in a net increase of 152,476 s.f. of retail. The project would change travel patterns in the area and change electricity and energy consumption that would affect air pollutant and greenhouse gas emissions. In addition, construction of the project would emit air pollutants and greenhouse gases. This analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

Setting

The project is located 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 ($PM_{2.5}$).

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NOx). These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. Highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone levels aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant in the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

The ambient air quality in a given area depends on the quantities of pollutants emitted within the area, transport of pollutants to and from surrounding areas, local and regional meteorological conditions, as well as the surrounding topography of the air basin. Air quality is described by the concentration of various pollutants in the atmosphere. Units of concentration are generally expressed in parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$). Milpitas is located at the north end of the Santa Clara Valley, where wind patterns are influenced greatly by the

[1] BAAQMD, 2011. *BAAQMD CEQA Air Quality Guidelines*. May.

terrain, resulting in a prevailing flow roughly parallel to the Valley's northwest-southeast axis with a north-northwesterly sea breeze extending up the valley during the afternoon and early evening and a light south-southeasterly drainage flow occurring during the late evening and early morning. Speeds are greatest in the spring and summer, and least in the fall and winter seasons. Nighttime and early morning hours have light winds and are frequently calm in all seasons, while summer afternoon and evenings are quite breezy. Strong winds are rare, coming only with an occasional winter storm.

Temperatures are warm in summer, under mostly clear skies, although a relatively large diurnal range results in cool nights. Winter temperatures are mild, except for very cool but generally frostless mornings. At the northern end of the Santa Clara Valley, the San Jose Airport mean maximum temperatures range from the high 70's to the low 80's during the summer to the high 50's-low 60's during the winter, and mean minimum temperatures range from the high 50's during the summer to the low 40's during the winter. Rainfall amounts are modest ranging from 13 inches in the lowlands to 20 inches in the hills.

The air pollution potential of the Santa Clara Valley is high. The valley has a large population and the largest complex of mobile sources in the Bay Area making it a major source of carbon monoxide, particulate and photochemical air pollution. In addition, photochemical precursors from San Francisco, San Mateo and Alameda counties can be carried along by the prevailing winds to the Santa Clara Valley making it also a major ozone receptor. Geographically, the valley tends to channel pollutants to the southeast with its northwest/southeast orientation, and concentrate pollutants by its narrowing to the southeast. Meteorologically, on high-ozone low-inversion summer days, the pollutants can be recirculated by the prevailing northwesterlies in the afternoon and the light drainage flow in the late evening and early morning, increasing the impact of emissions significantly. On high particulate and carbon monoxide days during late fall and winter, clear, calm and cold conditions associated with a strong surface based temperature inversion prevail.

National and State Ambient Air Quality Standards

The ambient air quality in a given area depends on the quantities of pollutants emitted within the area, transport of pollutants to and from surrounding areas, local and regional meteorological conditions, as well as the surrounding topography of the air basin. Air quality is described by the concentration of various pollutants in the atmosphere. Units of concentration are generally expressed in parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$).

As required by the Federal Clean Air Act, National Ambient Air Quality Standards (NAAQS) have been established for six major air pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter, including respirable particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$), sulfur oxides, and lead. Pursuant to the California Clean Air Act, the State of California has established the California Ambient Air Quality Standards (CAAQS). Relevant State and Federal standards are summarized in Table 1. CAAQS are generally the same or more stringent than NAAQS.

Air Quality Monitoring Data

The significance of a pollutant concentration is determined by comparing the concentration to an appropriate ambient air quality standard. The standards represent the allowable pollutant concentrations designed to ensure that the public health and welfare are protected, while including a reasonable margin of safety to protect the more sensitive individuals in the population. The San Francisco Bay Area is considered to be one of the cleanest metropolitan areas in the country with respect to air quality. BAAQMD monitors air quality conditions at more than 30 locations throughout the Bay Area. The closest monitoring station to the project site is in San Jose at the Jackson Street monitoring station. Summarized air pollutant data for this station is provided in Table 2. This table shows the highest air pollutant concentrations measured at the station over the five year period from 2007 through 2011.

Table 1. Relevant California and National Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards
Ozone	8-hour	0.070 ppm (137 μg/m^3)	0.075 ppm (147μg/m^3)
	1-hour	0.09 ppm (180 μg/m^3)	—
Carbon monoxide	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)
	8-hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
Nitrogen dioxide	1-hour	0.18 ppm (339 μg/m^3)	0.100 ppm (188 μg/m^3)
	Annual	0.030 ppm (57 μg/m^3)	0.053 ppm (100 μg/m^3)
Sulfur Dioxide	1-hour	0.25 ppm (655 μg/m^3)	0.075 ppm (196 μg/m^3)
	24-hour	0.04 ppm (105 μg/m^3)	0.14 ppm (365 μg/m^3)
	Annual	—	0.03 ppm (56 μg/m^3)
Particulate Matter (PM_{10})	Annual	20 μg/m^3	—
	24-hour	50 μg/m^3	150 μg/m^3
Particulate Matter ($PM_{2.5}$)	Annual	12 μg/m^3	15 μg/m^3
	24-hour	—	35 μg/m^3

Notes: ppm = parts per million mg/m3 = milligrams per cubic meter μg/m^3 = micrograms per cubic meter

Table 2. Highest Measured Air Pollutant Concentrations in San Jose

Pollutant	Average Time	Measured Air Pollutant Levels				
		2007	2008	2009	2010	2011
Ozone (O_3)	1-Hour	0.083 ppm	**0.118 ppm**	0.088 ppm	**0.126 ppm**	**0.098 ppm**
	8-Hour	0.068 ppm	**0.080 ppm**	0.069 ppm	**0.086 ppm**	0.067 ppm
Carbon Monoxide (CO)	8-Hour	2.71 ppm	2.48 ppm	2.50 ppm	2.19 ppm	2.18 ppm
Nitrogen Dioxide (NO_2)	1-Hour	0.065 ppm	0.080 ppm	0.069 ppm	0.064 ppm	0.061 ppm
	Annual	0.017 ppm	0.017 ppm	0.015 ppm	0.014 ppm	0.015
Respirable Particulate Matter (PM_{10})	24-Hour	**69.1 ug/m^3**	**57.3 ug/m^3**	43.3 ug/m^3	46.8 ug/m^3	44.3 ug/m^3
	Annual	**21.9 ug/m^3**	**23.4 ug/m^3**	20.3 ug/m^3	19.5 ug/m^3	19.2 ug/m^3
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	**57.5 ug/m^3**	**41.9 ug/m^3**	35.0 ug/m^3	41.5 ug/m^3	**50.5 ug/m^3**
	Annual	11.0 ug/m^3	11.5 ug/m^3	10.1 ug/m^3	9.0 ug/m^3	9.9 ug/m^3

Source: CARB, 2012.
Notes: ppm = parts per million and ug/m^3 = micrograms per cubic meter.
Values reported in bold exceed ambient air quality standard.
ND = No data.

The BAAQMD is the regional agency tasked with managing air quality in the region. At the State level, the California Air Resources Board (CARB) oversees regional air district activities and regulates air quality at the State level. The BAAQMD published CEQA Air Quality Guidelines are used in this assessment to evaluate air quality impacts of projects.[2]

Significance Thresholds

BAAQMD's adoption of its 2011 thresholds was called into question by an order issued March 5, 2012, in California Building Industry Association v. BAAQMD (Alameda Superior Court Case No. RGI0548693). The order requires BAAQMD to set aside its approval of the thresholds until it has conducted environmental review under CEQA. The claims made in the case concerned the environmental impacts of adopting the thresholds, that is, how the thresholds would indirectly affect land use development patterns. Those issues are not relevant to the scientific basis of BAAQMD's analysis of what levels of pollutants should be deemed significant. This analysis considers the science informing the thresholds as being supported by substantial evidence. Scientific information supporting the thresholds was documented in BAAQMD's proposed thresholds of significance analysis.[3] The thresholds will not cause any indirect impact in terms of land use development patterns insofar as this project is concerned, because the proposal to construct the project is not influenced by the BAAQMD guidelines. Accordingly, the analysis herein uses the thresholds and methodologies from BAAQMD's May 2011 CEQA Air Quality Guidelines to determine the potential impacts of the project on the

[2] BAAQMD, 2011, op. cit.
[3] BAAQMD. 2009. *California Environmental Quality Act Guidelines Update Proposed Thresholds of Significance*. December.

existing environment. The significance thresholds identified by BAAQMD and used in this analysis are summarized in Table 3.

Table 3 Air Quality Significance Thresholds

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
Criteria Air Pollutants			
ROG	54	54	10
NO_X	54	54	10
PM_{10}	82	82	15
$PM_{2.5}$	54	54	10
CO	Not Applicable	9.0 ppm (8-hour avg.) or 20.0 ppm (1-hour avg.)	
Fugitive Dust	Best Management Practices	Not Applicable	

Note: ROG = reactive organic gases, NO_X = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less.

Impact 1: Conflict with or obstruct implementation of the applicable air quality plan? ***No Impact***

The most recent clean air plan is the *Bay Area 2010 Clean Air Plan* (Clean Air Plan) that was adopted by BAAQMD in September 2010. This plan addresses air quality impacts with respect to obtaining ambient air quality standards for non-attainment pollutants (i.e., ozone and particulate matter or PM_{10} and $PM_{2.5}$), reducing exposure of sensitive receptors to TACs, and reducing greenhouse gas emissions such that the region can meet AB 32 goals of reducing emissions to 1990 levels by 2020.

Emissions of non-attainment criteria air pollutants are addressed under Impacts 2 and 3. Exposure of sensitive receptors to substantial pollutant concentrations is addressed under Impact 4.

Clean Air Plan Projections

The consistency of the proposed project with the Clean Air Plan is primarily a question of maintaining consistency with the population/employment assumptions utilized in the CAP. Changes that would affect the CAP's underlying assumptions (e.g., increases in employment or population), could increase emission projections. Because the proposed project does not include a change to the City's General Plan or rezoning, the assumption made under the CAP will not be changed. The proposed project would not substantially affect population or traffic forecasts, therefore, the project is consistent with the Clean Air Plan.

Consistency with Clean Air Plan Control Measures

The CAP includes emissions control measures that are intended to reduce air pollutant emissions in the Bay Area either directly or indirectly. The control measures are divided in to five categories that include:

- measures to reduce stationary and area sources;
- mobile source measures;
- transportation control measures;
- land use and local impact measures; and
- energy and climate measures

In developing the control measures, BAAQMD identified the full range of tools and resources available, both regulatory and non-regulatory, to address emissions. Implementation of each control measure will rely on some combination of the following:

- Adoption and enforcement of rules to reduce emissions from stationary sources, area sources, and indirect sources;
- Revisions to BAAQMD's permitting requirements for stationary sources;
- Enforcement of CARB rules to reduce emissions from heavy duty diesel engines;
- Allocation of grants and other funding by the Air District and/or partner agencies;
- Promotion of best policies and practices that can be implemented by local agencies through guidance documents, model ordinances, etc.;
- Partnerships with local governments, other public agencies, the business community, non-profits, etc.;
- Public outreach and education;
- Enhanced air quality monitoring;
- Development of land use guidance and CEQA guidelines, and Air District review and comment on Bay Area projects pursuant to CEQA; and
- Leadership and advocacy.

This approach relies upon lead agencies to assist in implementing some of the control measures. A key tool for local agency implementation is the development of land use policies and implementing measures that address new development or redevelopment in local communities. The proposed project is consistent with the existing General Plan land use designations and would not require a General Plan amendment.

Stationary and Area Source Control Measures

The CAP includes Stationary Source Control measures that BAAQMD adopts as rules or regulations through their authority to control emissions from stationary and area sources. The BAAQMD is the implementing agency, since these control measures are applicable to sources of air pollution that must obtain District permits. Any new stationary sources would be required to obtain proper permits through BAAQMD. In addition, the City uses BAAQMD's CEQA Air Quality Guidelines to evaluate air pollutant emissions from new sources.

Mobile Source Measures

The CAP includes Mobile Source Measures that would reduce emissions by accelerating the replacement of older, dirtier vehicles and equipment through programs such as the BAAQMD's Vehicle Buy-Back and Smoking Vehicle Programs, and promoting advanced technology vehicles that reduce emissions. The implementation of these measures relies heavily upon incentive programs, such as the Carl Moyer Program and the Transportation Fund for Clean Air, to achieve voluntary emission reductions in advance of, or in addition to, CARB requirements. CARB has new regulations that require the replacement or retrofit of on-road trucks, construction equipment and other specific equipment that is diesel powered.

Transportation Control Measures

The CAP includes transportation control measures (TCMs) that are strategies meant to reduce vehicle trips, vehicle use, vehicle miles traveled, vehicle idling, or traffic congestion for the purpose of reducing motor vehicle emissions. While most of the TCMs are implemented at the regional level (e.g., by MTC or Caltrans), there are measures that the CAP relies upon local communities to assist with implementation. In addition, the CAP includes land use measures and energy and climate measures where implementation is aided by proper land use planning decisions. The City's General Plan, with which the project is consistent, includes measures to reduce vehicle travel that are generally consistent with the CAP TCMs.

TAC Exposure

The CAP includes measures to reduce TAC exposure to sensitive receptors. The project site does not introduce any new sensitive receptors into the area, though could expose existing receptors to TACs from construction activity. The City, as Lead CEQA Agency, uses the BAAQMD CEQA Air Quality Thresholds to identify significant risks and develop appropriate mitigation measures. TAC impacts are addressed under Impact 4.

Impact 2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? ***Significant and unavoidable with construction-period mitigation measures***

The Bay Area is considered a non-attainment area for ground-level ozone and fine particulate matter ($PM_{2.5}$) under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for respirable particulates or particulate matter with a diameter of less than 10 micrometers (PM_{10}) under the California Clean Air Act, but not the Federal act. The area has attained both State and Federal ambient air quality standards for carbon monoxide.

Construction period emissions were modeled using emission factors from CARB's OFFROAD model for off-road construction equipment and from the EMFAC2011 model for emissions from

trucks (e.g., haul trucks and vendor trucks) along with projected construction activity. The California Emissions Estimator Model (CalEEMod) Version 2011.1.1 was used to predict ROG emissions from architectural coatings during construction. CalEEMod was also used to predict emissions from operation of the site assuming full build out of the project. The project land use types and size, and trip generation rate were input to CalEEMod.

Construction Period Emissions

Construction of the entire project was assumed to occur over an approximate 17-month period starting in June of 2013 and ending in October of 2014. Specific project information and the projected construction schedule were used with the emission factors from the OFFROAD model and EMFAC2011 to evaluate anticipated construction emissions. The refined construction information provided by the applicant is shown in *Attachment 1*. This information includes the schedule for each construction phase along with a list of the equipment anticipated to be used on a daily basis. This included the estimated number of days the equipment would operate for each phase and the average number of hours per day of operation. Off-road equipment horsepower estimates were based on the defaults used by the CalEEMod models, unless otherwise provided by the applicant. The load factors used by CARB's latest version of the OFFROAD model were applied. The OFFROAD emission rates for construction equipment representative of U.S. EPA Tier 2 engine emission standards (or a 2005 construction equipment fleet) were assumed.

Emissions from haul trucks, vendor trucks and construction worker trips associated with construction activities were calculated using emission factors from CARB's EMFAC2011 mobile source emissions model. Demolition truck hauling requirements of 250 truck loads of debris to be hauled away from the site were based on the estimated building volumes to be demolished assuming 20 cubic yard (CY) truck loads. Additionally, there would be about 22,000 haul truck trips (11,000 truck loads) required for the export and import of soil to the site during the grading phase. Emissions from on-road vehicles at the project site would also include water trucks used during grading activities. In calculating emissions from the demolition haul trucks and water truck, all trucks were assumed to be heavy heavy-duty trucks. Vendor truck trips were estimated at 48 trips per day during the mall/retail building phase, 29 trips per day during the hotel building phase and 77 trips per day during the building exterior construction phase, based on CalEEMod factors. Vendor trucks were assumed to be made up of 62 percent heavy heavy-duty trucks and 38 percent medium heavy-duty trucks based on CalEEMod.

Details of the emission calculations are provided in *Attachment 1*.

Land Use Descriptions

CalEEMod was used to predict ROG emissions from architectural coatings during construction. Predicted architectural coating-related emissions were added to emissions from on-road and off-road construction activity. The proposed land uses were input into CalEEMod (CalEEMod = "Hotel" and "Regional Shopping Center"). CalEEMod input and output worksheets are provided in *Attachment 2*.

Adjustments to the Model

The model results for the architectural coatings ROG emissions were reduced by 40 percent to account for the latest ROG emissions allowed by BAAQMD Regulation 8, Rule 3 – Architectural Coatings. The new BAAQMD regulations limit most paints to less than 150 grams per liter, while CalEEMod defaults to 250 grams per liter.

Table 4 shows average daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction. As indicated in Table 4, predicted construction NO_X emissions would exceed the BAAQMD recommended significance thresholds.

Table 4. Construction Period Emissions, Average Daily Emissions (pounds per day)

Scenario	ROG	NO_X	PM_{10}	$PM_{2.5}$
Off-Road Equipment	2.70	28.80	1.70	1.56
On-Road Worker Trips	0.26	0.31	0.19	0.06
On-Road Vendor Trips	0.45	8.15	0.45	0.28
On-Road Haul Trips	1.28	27.15	1.31	0.86
Architectural Coatings	17.49	NA	NA	NA
Total Proposed Project[1]	22.18	64.41	3.65	2.76
BAAQMD Thresholds (pounds per day)	*54*	*54*	*82*	*54*
Exceed Threshold?	***No***	***Yes***	***No***	***No***

Notes:
[1] Assumes 374 workdays based on an average 22 workdays per month.
NA = Not Applicable

Best management practices are necessary during trenching and grading activities to avoid generation of dust that may affect nearby sensitive receptors. In addition, Best Management Practices would also be needed to reduce NO_X emissions. However, after implementation of Mitigation Measure AQ-1a and AQ-1b, NO_X emissions are estimated to be 57.21 pounds per day, which is in excess of the threshold of 54 pounds per day. Therefore, even with implementation of these measures it is not possible to ensure that they will reduce regional air quality impacts related to a net increase of NO_X emissions to a less-than-significant level, and therefore, this impact would be considered significant and unavoidable.

Mitigation Measure AQ-1a: Include basic measures to control dust and exhaust during construction.

During any construction ground disturbance, 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. 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 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. 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.

7. 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-1b: Include additional measures to control exhaust emissions during construction.

Consistent with guidance from the BAAQMD, the following actions shall be required of construction contracts and specifications for the project.

8. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 2 minutes. Clear signage shall be provided for construction workers at all access points.

9. The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NO_X reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.

10. All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of NO_X.

11. All contractors shall use equipment that meets ARB's most recent certification standard for off-road heavy duty diesel engines.

Operational Period Emissions

The CalEEMod model along with the project vehicle trip generation rates and estimates were used to predict operational period air pollutant emissions associated with operation of a fully developed site under the proposed project. The model uses mobile emission factors from the California Air Resources Board's EMFAC2007 model and adjusts these based on the effect of new regulations to reduce GHG emissions. These regulations include the Pavley Rule that increases fleet efficiency (reducing fuel consumption) and the low carbon fuel standard. This model is sensitive to the year selected, since vehicle emissions have and continue to be reduced due to more stringent exhaust controls, newer vehicle fleet, fuel efficiency standards and low carbon fuels. Stationary sources of air pollution (e.g., back-up generators) have not been identified with this project, and therefore, are not envisioned as part of the proposed project. Adjustments to the modeling are described below. CalEEMod input and output worksheets are provided in *Attachment 2*.

Year of Analysis

Emissions associated with vehicle travel depend on the year of analysis. The earlier the year, the higher the emission rates as CalEEMod uses the California Air Resources Board's EMFAC2007 motor vehicle emissions model. This model assumes reduced emission rates as newer vehicles with lower emission rates replace older, more polluting vehicles through attrition of the overall vehicle fleet. The earliest year the project could be possibly constructed and operated would be 2015. Full build out occurring later than 2015 would result in lower emissions.

Land Use Descriptions

The "Regional Shopping Center" land use type (420,082 square feet) and "Hotel" land use type (250 rooms) were input to CalEEMod. A separate model was run for the existing land use ("Regional Shopping Center" – 267,606 square feet).

Trip Generation Rates

CalEEMod allows the user to enter specific trip generation rates. Fehr & Peers provided the trip generation rate for the project by land use type, which was entered into the model (Fehr & Peers, 2012). Pass-by and diverted link trips for retail were accounted for by Fehr & Peers.

Area Sources

One adjustment was made to the area source inputs of CalEEMod. The model assumes that portions of buildings (about 10 percent) are constantly being painted and the paints have a high level of volatile organic compound content that leads to higher estimates of ROG emissions. BAAQMD regulations (Reg. 8, Rule 3) limit the VOC content to lower levels. Therefore, the model was adjusted to 150 grams per liter of VOC.

Table 5 reports the predicted average daily operational emissions and Table 6 reports annual emissions. As shown in Tables 5 and 6, average daily and annual emissions of ROG, NO_X, PM_{10} exhaust, or $PM_{2.5}$ exhaust associated with operation would not exceed the BAAQMD significance thresholds. Therefore, this impact is considered less than significant.

Table 5. Daily Air Pollutant Emissions from Operation of the Project (pounds/day)

Scenario	ROG	NO_X	PM_{10}	$PM_{2.5}$
Proposed Project 2015	89	127	96	9
Existing Use 2012	82	127	78	7
Net Emissions	7	0	18	2
Daily Emission Thresholds	*54*	*54*	*82*	*54*
Exceed Threshold?	***No***	***No***	***No***	***No***

Table 6. Annual Air Pollutant Emissions from Operation of the Project (tons/year)

Scenario	ROG	NO_X	PM_{10}	$PM_{2.5}$
Proposed Project 2015	16.2	23.1	17.6	1.6
Existing Use 2012	14.9	23.1	14.2	1.3
Net Emissions	1.3	0.0	3.4	0.3
Annual Emission Thresholds	*10*	*10*	*15*	*10*
Exceed Threshold?	***No***	***No***	***No***	***No***

Impact 3: Violate any air quality standard or contribute substantially to an existing or projected air quality violation? ***Less than significant***

As discussed under Impact 2, the project would have emissions that would be below significance thresholds adopted by BAAQMD for evaluating impacts to ozone and particulate matter. Therefore, the project would not contribute substantially to existing or projected violations of those standards. Carbon monoxide emissions from traffic generated by the project would be the pollutant of greatest concern at the local level. Congested intersections with a large volume of traffic have the greatest potential to cause high-localized concentrations of carbon monoxide. Air pollutant monitoring data indicate that carbon monoxide levels have been at healthy levels (i.e., below State and Federal standards) in the Bay Area since the early 1990s. As a result, the region has been designated as attainment for the standard. There is an ambient air quality monitoring station in Fremont that measures carbon monoxide concentrations. The highest measured level over any 8-hour averaging period during the last 3 years is less than 2.0 parts per million (ppm), compared to the ambient air quality standard of 9.0 ppm. The roadways affected by the proposed project have relatively low traffic volumes compared to the busier intersections in the Bay Area. BAAQMD screening guidance indicates that projects would have a less than significant impact to carbon monoxide levels if project traffic projections indicate traffic levels would not increase at any affected intersection to more than 44,000 vehicles per hour. The intersections affected by the proposed project have much lower traffic volumes (less than 10,000

vehicles per hour). Therefore, the change in traffic caused by the proposed project would be minimal and the project would not cause or contribute to a violation of an ambient air quality standard.

Impact 4: Expose sensitive receptors to substantial pollutant concentrations? ***Less-than- significant***

Project impacts related to increased health risk can occur either by introducing a new sensitive receptor, such as a residential use, in proximity to an existing source of toxic air contaminants (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.

The proposed project would not introduce new sensitive receptors to the project site and sensitive receptors are not located within 1,000 feet of the project site. Construction and operation of the project is not expected to cause any localized emissions that could expose sensitive receptors to unhealthy air pollutant levels. Therefore, the project would have a less than significant impact with respect to community risk caused by construction and operational activities.

Impact 5: Create objectionable odors affecting a substantial number of people? ***No Impact***

Construction activities may cause localized odors that would be temporary and are not anticipated to result in frequent odor complaints.

Examples of odor-generating land uses include wastewater treatment plants, solid waste landfills and transfer stations, composting facilities, oil refineries, asphalt batch plants, chemical manufacturing plants, and coffee roasters, among others. Operation of the proposed project would not generate odors that would result in confirmed odor complaints.

Impact 6: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? ***Less-than- significant***

<u>GHG Significance Thresholds</u>

The BAAQMD CEQA Air Quality Guidelines contain methodology and thresholds of significance for evaluating greenhouse gas (GHG) emissions from land use type projects. The BAAQMD thresholds were developed specifically for the Bay Area after considering the latest Bay Area GHG inventory and the effects of AB 32 scoping plan measures that would reduce regional emissions. BAAQMD intends to achieve GHG reductions from new land use developments to close the gap between projected regional emissions with AB 32 scoping plan measures and the AB 32 targets. The BAAQMD suggested applying GHG efficiency thresholds to projects with emissions of 1,100 metric

tons (MT) of CO2e (carbon dioxide equivalency) or greater.[4] Projects that have emissions below 1,100 MT of CO2e per year are considered to have less than significant GHG emissions. The project size exceeds the screening size listed by BAAQMD as having less than significant GHG emissions. Therefore, a refined analysis that includes modeling of GHG emissions from the project was conducted.

Methodology

Greenhouse gas (GHG) emissions were computed for the full build out scenario of the proposed project. Specifically, construction emissions were computed for an assumed 17-month construction period with operational emissions in 2015. As described under Impact 2, the CalEEMod model was used to compute operational air pollutant emissions. The model also predicts emissions of GHG in the form of equivalent carbon dioxide emissions or CO_2e. CalEEMod worksheets are included in *Attachment 2*.

Construction Emissions

The primary GHG produced from the combustion of fuel is CO_2; while other GHGs, methane and nitrous oxide, are produced they typically contribute a negligible amount of GHG when compared to the CO_2 emissions. CO_2 emissions from the construction equipment were calculated using the OFFROAD model emission factors. Emissions of methane and nitrous oxide from the construction equipment were calculated based on fuel use and emission factors from the California Climate Action Registry.[5] CO_2 emissions from on-road vehicles were calculated using emission factors from the EMPFAC2011 model. Emissions of other GHGs from on-road vehicles are expected to be negligible.

CO_2 emissions associated with construction were assumed to occur in 2013 through 2014. Under this scenario, construction of the project would emit 1,658 MT of CO_2. Neither the City nor the BAAQMD have quantified thresholds for construction-related GHG emissions. However, BAAQMD encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable. Best management practices may include, but are not limited to: using alternative fueled (e.g., biodiesel, electric) construction vehicles/equipment for at least 15 percent of the fleet; using at least 10 percent local building materials; and recycling or reusing at least 50 percent of construction waste or demolition materials.

Operational Emissions

CalEEMod was also used to model operational period GHG emissions. Unless otherwise noted below, the model defaults for the Santa Clara County were used. CalEEMod provides emissions for transportation, areas sources, electricity consumption, natural gas combustion, electricity usage associated with water usage and wastewater discharge, and solid waste land filling.

[4] BAAQMD. 2011, op. cit.
[5] California Climate Action Registry, *General Reporting Protocol*, Version 3.1, January 2009.

The CalEEMod modeling methodology for the proposed project GHG emissions is the same used to predict air pollutant emissions that is described under Impact 2. The model uses mobile emission factors from the California Air Resources Board's EMFAC2007 model and adjusts these based on the effect of new regulations to reduce GHG emissions. These regulations include the Pavley Rule that increases fleet efficiency (reducing fuel consumption) and the low carbon fuel standard. This model is sensitive to the year selected, since vehicle emissions have and continue to be reduced due to fuel efficiency standards and low carbon fuels.

Energy Usage

Default rates for energy consumption were assumed in the model. Emissions rates associated with electricity consumption were adjusted to account for Pacific Gas & Electric utility's (PG&E) projected 2012, 2015 and 2020 CO_2 intensity rate. These rates are based, in part, on the requirement of a renewable energy portfolio standard of 33 percent by the year 2020. CalEEMod uses a default rate of 641 pounds of CO_2 per megawatt of electricity produced that is based on PG&E's 2008 certified rate. The derived 2012, 2015 and 2020 rates for PG&E were estimated at 452.60, 391.16 and 289.85 pounds of CO_2 per megawatt of electricity delivered, respectively, and are based on the California Public Utilities Commission (CPUC) GHG Calculator.[6]

In addition, the project would apply for LEED certification and has committed to some specific measures at this time, including but not limited to:

- Exceed the State Title 24 California Energy Code requirements;
- Install high-efficiency lighting;
- Design the project to reduce the "heat island effect;"
- Inclusion of low-flow water fixtures and toilets;
- Use of water-efficient landscaping; and
- Implement an office-wide solid waste recycling program.

Table 8 presents the results of the CalEEMod model analysis in terms of annual metric tons of equivalent CO_2 emissions (MT of CO_2e/yr). Assumptions are contained in the technical data provided in *Attachment 2*. As shown in Table 8 below, net emissions of the project operating in 2020 minus existing emissions would not exceed the bright-line-thresholds of 1,100 MT of CO_2e/yr and would be below the BAAQMD significance threshold.

[6] California Public Utilities Commissions GHG Calculator version 3c, October 7, 2010. Available on-line at: http://ethree.com/public_projects/cpuc2.php. Accessed: November 20, 2012.

Table 8 Annual Project GHG Emissions in Metric Tons

Source Category	Existing Emissions	2015 Emissions	2020 Emissions
Project			
Area	0	0	0
Energy	684	1,522	1,248
Mobile	12,604	15,254	12,975
Solid Waste	128	237	237
Water	49	74	63
Total	13,465	17,087	14,523
Net Emissions		3,622	1,058
BAAQMD Thresholds			*1,100 MT CO_2e/year*

Consistency with Adopted Plans to Reduce GHG Emissions

The project would be subject to new requirements under rule making developed at the State and local level regarding greenhouse gas emissions and be subject to local policies that may affect emissions of greenhouse gases. The City is currently developing a Climate Action Plan that could include policies and implementation measures that apply to future development.

Attachment 1

Construction Schedule and Equipment

Project Name: Pacific Mall - Milpitas								
June 2013-June 2015								
						Total	Total	
Qty	Description	HP	Load Factor	Hours/ day	Work Days	Equip ment Days	Annual Hours	Comments
Start Year								
Demolition		Start Date:	Jun-13					Hauling volume =5,000 cubic yards
8	Excavator	157	0.38	8	5	40	320	Demolition volume
8	Excavator	157	0.38	8	5	40	320	Demolition volume
8	Rubber Tire Loader	87	0.36	8	5	40	320	
4	Crushing/Processing Equip	85	0.78	8	5	20	160	
4	Crushing/Processing Equip	85	0.78	8	5	20	160	
8	Sweeper Scrubber	88	0.46	8	5	40	320	
					30	200		
						6.6667		
Mass Grading / Excavation		Start Date:	Aug-13					Hauling volume
10	Excavator	157	0.38	8	5	50	400	Export volume = 210,000 cubic yards
10	Excavator	157	0.38	8	5	50	400	Mass Excavation
10	Water Truck	189	0.34	5	5	50	250	Import volume = 10,000 cubic yards
4	Scraper	356	0.48	8	5	20	160	Structural Backfill
4	Grader	162	0.41	8	5	20	160	
4	Grader	162	0.41	8	5	20	160	
4	Compactor-sheeps foot	190	0.43	8	5	20	160	
10	Skid Steer	37	0.37	8	5	50	400	
4	Backhoe	75	0.37	8	5	20	160	
4	Rubber Tire Loader	87	0.36	8	5	20	160	
					50	320		
						6.4		
DeWatering		Start Date:	Aug-13					
1	Drill Rig	190	0.50	8	5	5	40	elec / diesel
30	Pumps	30	0.49	24	7	210	5040	elec / diesel
30	Pumps	30	0.49	24	7	210	5040	elec / diesel
30	Pumps	30	0.49	24	7	210	5040	elec / diesel
30	Pumps	30	0.49	24	7	210	5040	elec / diesel
30	Pumps	30	0.49	24	7	210	5040	elec / diesel
30	Pumps	30	0.49	24	7	210	5040	elec / diesel
					47	1265		
						26.915		
Trenching / Underground		Start Date:	Sep-13					
10	Tractor/Loader/Backhoe	75	0.37	8	5	50	400	diesel
						10		
		Start Date:	Oct-13					
Building - Structure - Garage / Mall								
12	Crane	208	0.29	6	5	60	360	diesel
4	Drill Rig	190	0.5	4	5	20	80	elec / diesel
4	Pile Drivers	190	0.5	8	5	20	160	diesel
8	Welders	46	0.3	8	5	40	320	diesel
8	Welders	46	0.3	8	5	40	320	diesel
8	Welders	46	0.3	8	5	40	320	diesel
8	Welders	46	0.3	8	5	40	320	diesel
15	Forklift	149	0.2	6	5	75	450	diesel
4	Forklift	149	0.2	6	5	20	120	diesel
10	Compressors	78	0.32	4	5	50	200	diesel
12	Gererator set	84	0.49	8	5	60	480	diesel
10	Aerial Lift	34	0.31	6	5	50	300	diesel

		Start Date:	Jan-14					
Building - Structure - Hotel								
30	Crane	208	0.29	6	5	150	900	elec / diesel
30	Man Lift	190	0.31	8	5	150	1200	elec / diesel
15	Compressors	78	0.32	4	5	75	300	diesel
5	Aerial Lift	34	0.31	4	5	25	100	diesel
8	Welders	46	0.30	8	5	40	320	diesel
15	Forklift	149	0.20	6	5	75	450	diesel
12	Gererator set	84	0.49	8	5	60	480	diesel
8	Cement mixers	9	0.37	8	5	40	320	elec / diesel
5	Aerial Lift	34	0.31	4	5	25	100	diesel
		Start Date:	Jun-14					
Building - Exterior								
5	Crane	208	0.29	6	5	25	150	elec / diesel
12	Forklift	149	0.20	4	5	60	240	diesel
12	Forklift	149	0.20	4	5	60	240	diesel
6	Welders	46	0.30	8	5	30	240	diesel
6	Welders	46	0.30	8	5	30	240	diesel
8	Cement mixers	9	0.37	8	5	40	320	elec / diesel
10	Aerial Lift	34	0.31	6	5	50	300	diesel
10	Aerial Lift	34	0.31	6	5	50	300	diesel
10	Aerial Lift	34	0.31	6	5	50	300	diesel
10	Aerial Lift	34	0.31	6	5	50	300	diesel
Fine Grading / Landscaping		Start Date:	Oct-14					
2	Skid Steer Loader	37	0.37	8	5	10	80	diesel
2	Skid Steer Loader	37	0.37	8	5	10	80	diesel
4	Backhoe	75	0.37	6	5	20	120	diesel
4	Water Truck	189	0.34	4	5	20	80	diesel
					20	60		
						3		
Paving		Start Date:	Oct-14					
1	Paving Equipment	82	0.35	8	4	4	32	diesel
1	Roller	84	0.37	8	4	4	32	diesel
1	Skid Steer Loader	37	0.37	8	4	4	32	diesel
					12	12		
						1		

Off-Road Construction Equipment & On-Site Vehicle Exhaust Emissions
Pacific Mall - 2013 & 2014 Construction Emissions with Tier 2 Equipment

Analysis Year = 2013 & 2014 **374 = Annual Days of Construction**

Off-Road Equipment Equipment Type	No. Units	Engine Age (years)	Engine Model Year	Daily Hours In Use	Days Per Year	Unit Annual Hours Use	Use Factor	Load Factor	Cumulative Hours Operation Per Unit	Engine (hp)	Fuel Type	Level of VDECS Used	Emission Factor (g/hp-hr) NOx	CO	ROG	PM10	PM2.5	SO2	CO2	Average Daily Emissions (lb/day) NOx	CO	ROG	PM10	PM2.5	SO2	CO2	Annual Emissions (lb/yr) NOx	CO	ROG	PM10	PM2.5	SO2	CO2
Construction Activities																																	
Demolition (6/3/2013 - 7/31/2013)																																	
Excavators	8	8	2005	8	5	40	1.00	0.38	4,368	157	ULSD	0	4.48	3.01	0.27	0.17	0.16	0.005	562.6	0.5	0.3	0.0	0.02	0.02	0.001	63	188.4	126.8	11.5	7.12	6.69	0.21	23680
Excavators	8	8	2005	8	5	40	1.00	0.38	4,368	157	ULSD	0	4.48	3.01	0.27	0.17	0.16	0.005	562.6	0.5	0.3	0.0	0.02	0.02	0.001	63	188.4	126.8	11.5	7.12	6.69	0.21	23680
Rubber Tired Loaders	8	8	2005	8	5	40	1.00	0.36	7,144	87	ULSD	0	5.52	3.74	0.49	0.35	0.33	0.005	562.6	0.3	0.2	0.0	0.02	0.02	0.000	33	121.9	82.5	10.8	7.80	7.39	0.11	12431
Crushing/Proc. Equipment	4	8	2005	8	5	40	1.00	0.78	7,640	85	ULSD	0	5.56	3.78	0.50	0.36	0.34	0.005	562.6	0.3	0.2	0.0	0.02	0.02	0.000	35	130.0	88.3	11.8	8.46	8.02	0.12	13158
Crushing/Proc. Equipment	4	8	2005	8	5	40	1.00	0.78	7,640	85	ULSD	0	5.56	3.78	0.50	0.36	0.34	0.005	562.6	0.3	0.2	0.0	0.02	0.02	0.000	35	130.0	88.3	11.8	8.46	8.02	0.12	13158
Sweepers/Scrubbers	8	8	2005	8	5	40	1.00	0.46	5,248	88	ULSD	0	5.37	3.58	0.43	0.32	0.30	0.005	562.6	0.4	0.3	0.0	0.02	0.02	0.000	43	153.3	102.2	12.4	9.17	8.64	0.14	16067
Dewatering (8/1/2013 - 8/30/2013)																																	
Bore/Drill Rigs	1	8	2005	8	5	40	1.00	0.50	3,136	190	ULSD	0	4.34	1.00	0.20	0.10	0.10	0.005	562.6	0.1	0.0	0.0	0.00	0.00	0.000	13	36.4	8.3	1.6	0.86	0.80	0.04	4713
Pumps	30	8	2005	24	7	168	1.00	0.49	3,224	30	ULSD	0	4.99	3.98	0.59	0.38	0.36	0.006	562.6	2.2	1.7	0.3	0.17	0.16	0.002	246	814.7	650.6	96.8	62.00	58.03	0.91	91896
Pumps	30	8	2005	24	7	168	1.00	0.49	3,224	30	ULSD	0	4.99	3.98	0.59	0.38	0.36	0.006	562.6	2.2	1.7	0.3	0.17	0.16	0.002	246	814.7	650.6	96.8	62.00	58.03	0.91	91896
Pumps	30	8	2005	24	7	168	1.00	0.49	3,224	30	ULSD	0	4.99	3.98	0.59	0.38	0.36	0.006	562.6	2.2	1.7	0.3	0.17	0.16	0.002	246	814.7	650.6	96.8	62.00	58.03	0.91	91896
Pumps	30	8	2005	24	7	168	1.00	0.49	3,224	30	ULSD	0	4.99	3.98	0.59	0.38	0.36	0.006	562.6	2.2	1.7	0.3	0.17	0.16	0.002	246	814.7	650.6	96.8	62.00	58.03	0.91	91896
Pumps	30	8	2005	24	7	168	1.00	0.49	3,224	30	ULSD	0	4.99	3.98	0.59	0.38	0.36	0.006	562.6	2.2	1.7	0.3	0.17	0.16	0.002	246	814.7	650.6	96.8	62.00	58.03	0.91	91896
Mass Grading/Excavation (8/31/2013 - 10/1/2013)																																	
Excavators	10	8	2005	8	5	40	1.00	0.38	4,368	157	ULSD	0	4.48	3.01	0.27	0.17	0.16	0.005	562.6	0.6	0.4	0.0	0.02	0.02	0.001	79	235.5	158.5	14.3	8.90	8.36	0.26	29600
Excavators	10	8	2005	8	5	40	1.00	0.38	4,368	157	ULSD	0	4.48	3.01	0.27	0.17	0.16	0.005	562.6	0.6	0.4	0.0	0.02	0.02	0.001	79	235.5	158.5	14.3	8.90	8.36	0.26	29600
Scrapers	4	8	2005	8	5	40	1.00	0.48	3,624	356	ULSD	0	3.97	0.99	0.19	0.10	0.10	0.005	562.6	0.6	0.2	0.0	0.02	0.02	0.001	91	239.5	59.4	11.5	6.27	5.85	0.30	33913
Graders	4	8	2005	8	5	40	1.00	0.41	4,880	162	ULSD	0	4.51	3.05	0.29	0.17	0.16	0.005	562.6	0.3	0.2	0.0	0.01	0.01	0.000	35	105.6	71.4	6.7	4.08	3.84	0.12	13182
Graders	4	8	2005	8	5	40	1.00	0.41	4,880	162	ULSD	0	4.51	3.05	0.29	0.17	0.16	0.005	562.6	0.3	0.2	0.0	0.01	0.01	0.000	35	105.6	71.4	6.7	4.08	3.84	0.12	13182
Compactor - sheeps foot	4	8	2005	8	5	40	1.00	0.43	3,272	190	ULSD	0	4.35	1.00	0.20	0.10	0.10	0.005	562.6	0.3	0.1	0.0	0.01	0.01	0.000	43	125.3	28.8	5.7	2.97	2.77	0.14	16214
Skid Steer Loaders	10	8	2005	8	5	40	1.00	0.37	2,376	37	ULSD	0	4.91	3.72	0.53	0.36	0.34	0.006	562.6	0.2	0.1	0.0	0.01	0.01	0.000	18	59.3	45.0	6.4	4.34	4.05	0.07	6792
Tractors/Loaders/Backhoes	4	8	2005	8	5	40	1.00	0.37	4,096	75	ULSD	0	5.27	3.48	0.40	0.30	0.28	0.005	562.6	0.1	0.1	0.0	0.01	0.01	0.000	15	51.6	34.1	3.9	2.95	2.77	0.05	5507
Rubber Tired Loaders	4	8	2005	8	5	40	1.00	0.36	7,144	87	ULSD	0	5.52	3.74	0.49	0.35	0.33	0.005	562.6	0.2	0.1	0.0	0.01	0.01	0.000	17	61.0	41.3	5.4	3.90	3.70	0.06	6216
Trenching (10/2/2013 - 10/30/2013)																																	
Tractors/Loaders/Backhoes	10	8	2005	8	5	40	1.00	0.37	4,096	75	ULSD	0	5.27	3.48	0.40	0.30	0.28	0.005	562.6	0.3	0.2	0.0	0.02	0.02	0.000	37	129.1	85.2	9.8	7.38	6.92	0.12	13768
Building - Structure - Mall (10/31/2013 - 1/30/2014)																																	
Cranes	12	8	2005	6	5	30	1.00	0.29	3,552	208	ULSD	0	4.37	1.01	0.21	0.10	0.10	0.005	562.6	0.6	0.1	0.0	0.01	0.01	0.001	72	209.0	48.2	9.8	5.00	4.66	0.24	26935
Bore/Drill Rigs	4	8	2005	4	5	20	1.00	0.50	3,136	190	ULSD	0	4.34	1.00	0.20	0.10	0.10	0.005	562.6	0.2	0.0	0.0	0.00	0.00	0.000	25	72.7	16.7	3.3	1.72	1.60	0.08	9427
Pile Drivers	4	8	2005	8	5	40	1.00	0.50	3,136	190	ULSD	0	4.34	1.00	0.20	0.10	0.10	0.005	562.6	0.4	0.1	0.0	0.01	0.01	0.000	50	145.4	33.4	6.5	3.44	3.20	0.17	18854
Welders	32	8	2005	8	5	40	1.00	0.30	5,144	46	ULSD	0	5.16	4.57	0.72	0.42	0.40	0.006	562.6	0.5	0.5	0.1	0.04	0.04	0.001	59	201.1	177.9	28.2	16.53	15.59	0.22	21910
Forklifts	19	8	2005	6	5	30	1.00	0.20	5,520	149	ULSD	0	4.55	3.09	0.30	0.18	0.17	0.005	562.6	0.5	0.3	0.0	0.02	0.02	0.001	56	170.3	115.9	11.3	6.74	6.36	0.19	21069
Compressors	10	8	2005	4	5	20	1.00	0.32	6,520	78	ULSD	0	5.47	3.68	0.47	0.34	0.32	0.005	562.6	0.2	0.1	0.0	0.01	0.01	0.000	17	60.2	40.5	5.2	3.77	3.57	0.05	6192
Generator Sets	12	8	2005	8	5	40	1.00	0.49	6,520	84	ULSD	0	5.47	3.68	0.47	0.34	0.32	0.005	562.6	0.6	0.4	0.1	0.04	0.04	0.001	66	238.2	160.4	20.5	14.92	14.11	0.22	24506
Aerial Lifts	10	8	2005	6	5	30	1.00	0.31	2,128	34	ULSD	0	4.89	3.65	0.52	0.35	0.33	0.006	562.6	0.1	0.1	0.0	0.01	0.01	0.000	10	34.1	25.4	3.6	2.47	2.30	0.04	3922
Building - Structure - Hotel (1/31/2014 - 7/1/2014)																																	
Cranes	30	8	2005	6	5	30	1.00	0.29	3,552	208	ULSD	0	4.37	1.01	0.21	0.10	0.10	0.005	562.6	1.4	0.3	0.1	0.03	0.03	0.002	180	522.5	120.4	24.6	12.50	11.66	0.60	67337
Man Lifts	30	8	2005	8	5	40	1.00	0.31	2,128	190	ULSD	0	4.28	0.97	0.17	0.10	0.09	0.005	562.6	1.8	0.4	0.1	0.04	0.04	0.002	234	666.9	151.4	26.7	15.25	14.15	0.78	87669
Compressors	15	8	2005	4	5	20	1.00	0.32	6,520	78	ULSD	0	5.47	3.68	0.47	0.34	0.32	0.005	562.6	0.2	0.2	0.0	0.02	0.01	0.000	25	90.3	60.8	7.8	5.66	5.35	0.08	9288
Aerial Lifts	5	8	2005	4	5	20	1.00	0.31	2,128	34	ULSD	0	4.89	3.65	0.52	0.35	0.33	0.006	562.6	0.0	0.0	0.0	0.00	0.00	0.000	3	11.4	8.5	1.2	0.82	0.77	0.01	1307
Welders	8	8	2005	8	5	40	1.00	0.30	5,144	46	ULSD	0	5.16	4.57	0.72	0.42	0.40	0.006	562.6	0.1	0.1	0.0	0.01	0.01	0.000	15	50.3	44.5	7.1	4.13	3.90	0.05	5477
Forklifts	15	8	2005	6	5	30	1.00	0.20	5,520	149	ULSD	0	4.55	3.09	0.30	0.18	0.17	0.005	562.6	0.4	0.2	0.0	0.01	0.01	0.000	44	134.4	91.5	8.9	5.32	5.02	0.15	16633
Generator Sets	12	8	2005	8	5	40	1.00	0.49	6,520	84	ULSD	0	5.47	3.68	0.47	0.34	0.32	0.005	562.6	0.6	0.4	0.1	0.04	0.04	0.001	66	238.2	160.4	20.5	14.92	14.11	0.22	24506
Cement and Mortar Mixers	8	8	2005	8	5	40	1.00	0.37	2,400	9	ULSD	0	4.14	3.47	0.49	0.30	0.28	0.009	562.6	0.0	0.0	0.0	0.00	0.00	0.000	4	9.7	8.2	1.2	0.71	0.66	0.02	1322
Aerial Lifts	5	8	2005	4	5	20	1.00	0.31	2,128	34	ULSD	0	4.89	3.65	0.52	0.35	0.33	0.006	562.6	0.0	0.0	0.0	0.00	0.00	0.000	3	11.4	8.5	1.2	0.82	0.77	0.01	1307
Building - Exterior (7/2/2014 - 10/30/2014)																																	
Cranes	5	8	2005	6	5	30	1.00	0.29	3,552	208	ULSD	0	4.37	1.01	0.21	0.10	0.10	0.005	562.6	0.2	0.1	0.0	0.01	0.01	0.000	30	87.1	20.1	4.1	2.08	1.94	0.10	11223
Forklifts	24	8	2005	4	5	20	1.00	0.20	5,520	149	ULSD	0	4.55	3.09	0.30	0.18	0.17	0.005	562.6	0.4	0.3	0.0	0.02	0.01	0.000	47	143.4	97.6	9.5	5.68	5.36	0.16	17742
Welders	12	8	2005	8	5	40	1.00	0.30	5,144	46	ULSD	0	5.16	4.57	0.72	0.42	0.40	0.006	562.6	0.2	0.2	0.0	0.02	0.02	0.000	22	75.4	66.7	10.6	6.20	5.85	0.08	8216
Cement and Mortar Mixers	8	8	2005	8	5	40	1.00	0.37	2,400	9	ULSD	0	4.14	3.47	0.49	0.30	0.28	0.009	562.6	0.0	0.0	0.0	0.00	0.00	0.000	4	9.7	8.2	1.2	0.71	0.66	0.02	1322
Aerial Lifts	40	8	2005	6	5	30	1.00	0.31	2,128	34	ULSD	0	4.89	3.65	0.52	0.35	0.33	0.006	562.6	0.4	0.3	0.0	0.03	0.02	0.000	42	136.3	101.8	14.4	9.87	9.19	0.15	15688
Fine Grading (10/31/2014 - 12/2/2014)																																	
Skid Steer Loaders	4	8	2005	8	5	40	1.00	0.37	2,376	37	ULSD	0	4.91	3.72	0.53	0.36	0.34	0.006	562.6	0.1	0.0	0.0	0.00	0.00	0.000	7	23.7	18.0	2.6	1.74	1.62	0.03	2717
Tractors/Loaders/Backhoes	4	8	2005	6	5	30	1.00	0.37	4,096	75	ULSD	0	5.27	3.48	0.40	0.30	0.28	0.005	562.6	0.1	0.1	0.0	0.01	0.01	0.000	11	38.7	25.6	2.9	2.21	2.08	0.04	4130
Paving (12/3/2014 - 1/2/2015)																																	
Paving Equipment	1	8	2005	8	4	32	1.00	0.35	3,200	82	ULSD	0	5.20	3.41	0.37	0.29	0.27	0.005	562.6	0.0	0.0	0.0	0.00	0.00	0.000	3	10.5	6.9	0.8	0.58	0.54	0.01	1139
Rollers	1	8	2005	8	4	32	1.00	0.37	2,392	84	ULSD	0	5.14	3.34	0.35	0.27	0.25	0.005	562.6	0.0	0.0	0.0	0.00	0.00	0.000	3	11.3	7.3	0.8	0.60	0.56	0.01	1234
Skid Steer Loaders	1	8	2005	8	4	32	1.00	0.37	2,376	37	ULSD	0	4.91	3.72	0.53	0.36	0.34	0.006	562.6	0.0	0.0	0.0	0.00	0.00	0.000	1	4.7	3.6	0.5	0.35	0.32	0.01	543
Subtotal																				***28.32***	***18.47***	***2.60***	***1.66***	***1.55***	***0.03***	***3310***	***10591.7***	***6908.7***	***971.4***	***619.5***	***580.8***	***11.6***	***1,237,852***
On-Road Vehicles	**No. Trucks**			**Hours/ Day**	**Days/ Year**	**Annual Hours per Truck**		**Speed (mph)**	**Travel Miles per Day**				**Emission Factors (g/mi) NOx**	**CO**	**ROG**	**PM10**	**PM2.5**	**SO2**	**CO2**	**NOx**	**CO**	**ROG**	**PM10**	**PM2.5**	**SO2**	**CO2**	**NOx**	**CO**	**ROG**	**PM10**	**PM2.5**	**SO2**	**CO2**
Mass Grading/Excavation (8/31/2013 - 10/1/2013)																																	
Water Truck	10	-	-	5	5	25	-	10	50	-	ULSD	-	22.87	6.88	3.323	0.644	0.592	0.017	3293.0	0.34	0.10	0.05	0.01	0.01	0.00	49	126.08	37.90	18.32	3.55	3.26	0.09	18150
Fine Grading (10/31/2014 - 12/2/2014)																																	
Water Truck	4	-	-	4	5	20	-	10	40	-	ULSD	-	22.92	6.88	3.323	0.644	0.592	0.017	3293.0	0.11	0.03	0.02	0.00	0.00	0.00	16	40.42	12.13	5.86	1.14	1.04	0.03	5808
Subtotal	14																			***0.45***	***0.13***	***0.06***	***0.01***	***0.01***	***0.00***	***64***	***166.5***	***50.0***	***24.2***	***4.7***	***4.3***	***0.1***	***23,957***
TOTAL OFF-ROAD EQUIPMENT & ON-SITE ON-ROAD VEHICLE EMISSIONS													**-**	**-**	**-**	**-**				**28.8**	**18.6**	**2.7**	**1.7**	**1.56**	**0.03**	**3,374**	**10,758.2**	**6,958.7**	**995.6**	**624.2**	**585.1**	**11.7**	**1,261,809**

Notes: On-Road vehicle emission factors from EMFAC2013 for Santa Clara Co. for heavy heavy-duty diesel trucks.

Emission Factors - Off-Road Compression Ignited Engines

	NOx			CO			ROG			PM10			PM2.5			CO2			SO2
EF ID	ZH EF (g/hp-hr)	DR (g/hp-hr^2)	Fuel CF	ZH EF (g/hp-hr)	DR (g/hp-hr^2)	Fuel CF	ZH EF (g/hp-hr)	DR (g/hp-hr^2)	Fuel CF	ZH EF (g/hp-hr)	DR (g/hp-hr^2)	Fuel CF	ZH EF (g/hp-hr)	DR (g/hp-hr^2)	Fuel CF	ZH EF (g/hp-hr)	DR (g/hp-hr^2)	Fuel LCF-CF	(g/hp-hr)
Demolition (6/3/2013 - 7/31/2013)																			
ULSD1752005	4.44	6.46E-05	0.95	2.70	7.14E-05	1.00	0.16	2.57E-05	1.00	0.16	1.18E-05	0.80	0.15	1.18E-05	0.80	568.30	0.00E+00	0.99	0.005
ULSD1752005	4.44	6.46E-05	0.95	2.70	7.14E-05	1.00	0.16	2.57E-05	1.00	0.16	1.18E-05	0.80	0.15	1.18E-05	0.80	568.30	0.00E+00	0.99	0.005
ULSD1202005	5.22	8.40E-05	0.95	3.14	8.33E-05	1.00	0.28	2.92E-05	1.00	0.29	2.12E-05	0.80	0.27	2.12E-05	0.80	568.30	0.00E+00	0.99	0.005
ULSD1202005	5.22	8.40E-05	0.95	3.14	8.33E-05	1.00	0.28	2.92E-05	1.00	0.29	2.12E-05	0.80	0.27	2.12E-05	0.80	568.30	0.00E+00	0.99	0.005
ULSD1202005	5.22	8.40E-05	0.95	3.14	8.33E-05	1.00	0.28	2.92E-05	1.00	0.29	2.12E-05	0.80	0.27	2.12E-05	0.80	568.30	0.00E+00	0.99	0.005
ULSD1202005	5.22	8.40E-05	0.95	3.14	8.33E-05	1.00	0.28	2.92E-05	1.00	0.29	2.12E-05	0.80	0.27	2.12E-05	0.80	568.30	0.00E+00	0.99	0.005
Dewatering (8/1/2013 - 8/30/2013)																			
ULSD2502005	4.38	6.33E-05	0.95	0.92	2.43E-05	1.00	0.12	2.40E-05	1.00	0.11	5.79E-06	0.80	0.10	5.79E-06	0.80	568.30	0.00E+00	0.99	0.005
ULSD502005	4.95	9.67E-05	0.95	3.00	3.05E-04	1.00	0.37	6.90E-05	1.00	0.38	2.93E-05	0.80	0.35	2.93E-05	0.80	568.30	0.00E+00	0.99	0.006
ULSD502005	4.95	9.67E-05	0.95	3.00	3.05E-04	1.00	0.37	6.90E-05	1.00	0.38	2.93E-05	0.80	0.35	2.93E-05	0.80	568.30	0.00E+00	0.99	0.006
ULSD502005	4.95	9.67E-05	0.95	3.00	3.05E-04	1.00	0.37	6.90E-05	1.00	0.38	2.93E-05	0.80	0.35	2.93E-05	0.80	568.30	0.00E+00	0.99	0.006
ULSD502005	4.95	9.67E-05	0.95	3.00	3.05E-04	1.00	0.37	6.90E-05	1.00	0.38	2.93E-05	0.80	0.35	2.93E-05	0.80	568.30	0.00E+00	0.99	0.006
ULSD502005	4.95	9.67E-05	0.95	3.00	3.05E-04	1.00	0.37	6.90E-05	1.00	0.38	2.93E-05	0.80	0.35	2.93E-05	0.80	568.30	0.00E+00	0.99	0.006
Mass Grading/Excavation (8/31/2013 - 10/1/2013)																			
ULSD1752005	4.44	6.46E-05	0.95	2.70	7.14E-05	1.00	0.16	2.57E-05	1.00	0.16	1.18E-05	0.80	0.15	1.18E-05	0.80	568.30	0.00E+00	0.99	0.005
ULSD1752005	4.44	6.46E-05	0.95	2.70	7.14E-05	1.00	0.16	2.57E-05	1.00	0.16	1.18E-05	0.80	0.15	1.18E-05	0.80	568.30	0.00E+00	0.99	0.005
ULSD5002005	4.00	5.30E-05	0.95	0.92	1.82E-05	1.00	0.10	2.50E-05	1.00	0.11	5.55E-06	0.80	0.10	5.55E-06	0.80	568.30	0.00E+00	0.99	0.005
ULSD1752005	4.44	6.46E-05	0.95	2.70	7.14E-05	1.00	0.16	2.57E-05	1.00	0.16	1.18E-05	0.80	0.15	1.18E-05	0.80	568.30	0.00E+00	0.99	0.005
ULSD1752005	4.44	6.46E-05	0.95	2.70	7.14E-05	1.00	0.16	2.57E-05	1.00	0.16	1.18E-05	0.80	0.15	1.18E-05	0.80	568.30	0.00E+00	0.99	0.005
ULSD2502005	4.38	6.33E-05	0.95	0.92	2.43E-05	1.00	0.12	2.40E-05	1.00	0.11	5.79E-06	0.80	0.10	5.79E-06	0.80	568.30	0.00E+00	0.99	0.005
ULSD502005	4.95	9.67E-05	0.95	3.00	3.05E-04	1.00	0.37	6.90E-05	1.00	0.38	2.93E-05	0.80	0.35	2.93E-05	0.80	568.30	0.00E+00	0.99	0.006
ULSD1202005	5.22	8.40E-05	0.95	3.14	8.33E-05	1.00	0.28	2.92E-05	1.00	0.29	2.12E-05	0.80	0.27	2.12E-05	0.80	568.30	0.00E+00	0.99	0.005
ULSD1202005	5.22	8.40E-05	0.95	3.14	8.33E-05	1.00	0.28	2.92E-05	1.00	0.29	2.12E-05	0.80	0.27	2.12E-05	0.80	568.30	0.00E+00	0.99	0.005
Trenching (10/2/2013 - 10/30/2013)																			
ULSD1202005	5.22	8.40E-05	0.95	3.14	8.33E-05	1.00	0.28	2.92E-05	1.00	0.29	2.12E-05	0.80	0.27	2.12E-05	0.80	568.30	0.00E+00	0.99	0.005
Building - Structure - Mall (10/31/2013 - 1/30/2014)																			
ULSD2502005	4.38	6.33E-05	0.95	0.92	2.43E-05	1.00	0.12	2.40E-05	1.00	0.11	5.79E-06	0.80	0.10	5.79E-06	0.80	568.30	0.00E+00	0.99	0.005
ULSD2502005	4.38	6.33E-05	0.95	0.92	2.43E-05	1.00	0.12	2.40E-05	1.00	0.11	5.79E-06	0.80	0.10	5.79E-06	0.80	568.30	0.00E+00	0.99	0.005
ULSD2502005	4.38	6.33E-05	0.95	0.92	2.43E-05	1.00	0.12	2.40E-05	1.00	0.11	5.79E-06	0.80	0.10	5.79E-06	0.80	568.30	0.00E+00	0.99	0.005
ULSD502005	4.95	9.67E-05	0.95	3.00	3.05E-04	1.00	0.37	6.90E-05	1.00	0.38	2.93E-05	0.80	0.35	2.93E-05	0.80	568.30	0.00E+00	0.99	0.006
ULSD1752005	4.44	6.46E-05	0.95	2.70	7.14E-05	1.00	0.16	2.57E-05	1.00	0.16	1.18E-05	0.80	0.15	1.18E-05	0.80	568.30	0.00E+00	0.99	0.005
ULSD1202005	5.22	8.40E-05	0.95	3.14	8.33E-05	1.00	0.28	2.92E-05	1.00	0.29	2.12E-05	0.80	0.27	2.12E-05	0.80	568.30	0.00E+00	0.99	0.005
ULSD1202005	5.22	8.40E-05	0.95	3.14	8.33E-05	1.00	0.28	2.92E-05	1.00	0.29	2.12E-05	0.80	0.27	2.12E-05	0.80	568.30	0.00E+00	0.99	0.005
ULSD502005	4.95	9.67E-05	0.95	3.00	3.05E-04	1.00	0.37	6.90E-05	1.00	0.38	2.93E-05	0.80	0.35	2.93E-05	0.80	568.30	0.00E+00	0.99	0.006
Building - Structure - Hotel (1/31/2014 - 7/1/2014)																			
ULSD2502005	4.38	6.33E-05	0.95	0.92	2.43E-05	1.00	0.12	2.40E-05	1.00	0.11	5.79E-06	0.80	0.10	5.79E-06	0.80	568.30	0.00E+00	0.99	0.005
ULSD2502005	4.38	6.33E-05	0.95	0.92	2.43E-05	1.00	0.12	2.40E-05	1.00	0.11	5.79E-06	0.80	0.10	5.79E-06	0.80	568.30	0.00E+00	0.99	0.005
ULSD1202005	5.22	8.40E-05	0.95	3.14	8.33E-05	1.00	0.28	2.92E-05	1.00	0.29	2.12E-05	0.80	0.27	2.12E-05	0.80	568.30	0.00E+00	0.99	0.005
ULSD502005	4.95	9.67E-05	0.95	3.00	3.05E-04	1.00	0.37	6.90E-05	1.00	0.38	2.93E-05	0.80	0.35	2.93E-05	0.80	568.30	0.00E+00	0.99	0.006
ULSD502005	4.95	9.67E-05	0.95	3.00	3.05E-04	1.00	0.37	6.90E-05	1.00	0.38	2.93E-05	0.80	0.35	2.93E-05	0.80	568.30	0.00E+00	0.99	0.006
ULSD1752005	4.44	6.46E-05	0.95	2.70	7.14E-05	1.00	0.16	2.57E-05	1.00	0.16	1.18E-05	0.80	0.15	1.18E-05	0.80	568.30	0.00E+00	0.99	0.005
ULSD1202005	5.22	8.40E-05	0.95	3.14	8.33E-05	1.00	0.28	2.92E-05	1.00	0.29	2.12E-05	0.80	0.27	2.12E-05	0.80	568.30	0.00E+00	0.99	0.005
ULSD152005	4.37	0.00E+00	0.95	3.47	0.00E+00	1.00	0.49	0.00E+00	1.00	0.38	0.00E+00	0.80	0.35	0.00E+00	0.80	568.30	0.00E+00	0.99	0.009
ULSD502005	4.95	9.67E-05	0.95	3.00	3.05E-04	1.00	0.37	6.90E-05	1.00	0.38	2.93E-05	0.80	0.35	2.93E-05	0.80	568.30	0.00E+00	0.99	0.006
Building - Exterior (7/2/2014 - 10/30/2014)																			
ULSD2502005	4.38	6.33E-05	0.95	0.92	2.43E-05	1.00	0.12	2.40E-05	1.00	0.11	5.79E-06	0.80	0.10	5.79E-06	0.80	568.30	0.00E+00	0.99	0.005
ULSD1752005	4.44	6.46E-05	0.95	2.70	7.14E-05	1.00	0.16	2.57E-05	1.00	0.16	1.18E-05	0.80	0.15	1.18E-05	0.80	568.30	0.00E+00	0.99	0.005
ULSD502005	4.95	9.67E-05	0.95	3.00	3.05E-04	1.00	0.37	6.90E-05	1.00	0.38	2.93E-05	0.80	0.35	2.93E-05	0.80	568.30	0.00E+00	0.99	0.006
ULSD152005	4.37	0.00E+00	0.95	3.47	0.00E+00	1.00	0.49	0.00E+00	1.00	0.38	0.00E+00	0.80	0.35	0.00E+00	0.80	568.30	0.00E+00	0.99	0.009
ULSD502005	4.95	9.67E-05	0.95	3.00	3.05E-04	1.00	0.37	6.90E-05	1.00	0.38	2.93E-05	0.80	0.35	2.93E-05	0.80	568.30	0.00E+00	0.99	0.006
Fine Grading (10/31/2014 - 12/2/2014)																			
ULSD502005	4.95	9.67E-05	0.95	3.00	3.05E-04	1.00	0.37	6.90E-05	1.00	0.38	2.93E-05	0.80	0.35	2.93E-05	0.80	568.30	0.00E+00	0.99	0.006
ULSD1202005	5.22	8.40E-05	0.95	3.14	8.33E-05	1.00	0.28	2.92E-05	1.00	0.29	2.12E-05	0.80	0.27	2.12E-05	0.80	568.30	0.00E+00	0.99	0.005
Paving (12/3/2014 - 1/2/2015)																			
ULSD1202005	5.22	8.40E-05	0.95	3.14	8.33E-05	1.00	0.28	2.92E-05	1.00	0.29	2.12E-05	0.80	0.27	2.12E-05	0.80	568.30	0.00E+00	0.99	0.005
ULSD1202005	5.22	8.40E-05	0.95	3.14	8.33E-05	1.00	0.28	2.92E-05	1.00	0.29	2.12E-05	0.80	0.27	2.12E-05	0.80	568.30	0.00E+00	0.99	0.005
ULSD502005	4.95	9.67E-05	0.95	3.00	3.05E-04	1.00	0.37	6.90E-05	1.00	0.38	2.93E-05	0.80	0.35	2.93E-05	0.80	568.30	0.00E+00	0.99	0.006

Notes: ZH EF = Zero hour emission factor
DR = Deterioration rate
ULSD = Ultra low sulfur diesel (15 ppmw sulfur, 0.0015% sulfur)

Refs: CARB OFFFROAD2007 model (http://www.arb.ca.gov/msei/offroad/offroad.htm), December, 2006.
Stationary/Off-road engines ARB, "California's Emissions Inventory for Off-Road Large Compression-Ignited (CI) Engines (> 25 HP)" MAC#99-32

Pacific Mall - 2013 & 2014 Construction Emissions with Tier 2 Equipment
Greenhouse Gases

	N2O	CH4
EF (kg/gal)	0.00026	0.00058
GWP	296	23

Per Unit	Total	N2O	CH4	MT CO2e/year			
(gal/hr)	(gal/yr)	(kg/yr)	(kg/yr)	CO2	N2O	CH4	Total
3.1	1,001	0.3	0.6	10.7	0.08	0.01	10.8
3.1	1,001	0.3	0.6	10.7	0.08	0.01	10.8
1.6	525	0.1	0.3	5.6	0.04	0.01	5.7
3.5	556	0.1	0.3	6.0	0.04	0.01	6.0
3.5	556	0.1	0.3	6.0	0.04	0.01	6.0
2.1	679	0.2	0.4	7.3	0.05	0.01	7.3
5.0	199	0.1	0.1	2.1	0.02	0.00	2
0.9	4,318	1.1	2.5	41.7	0.33	0.06	42
0.9	4,318	1.1	2.5	41.7	0.33	0.06	42
0.9	4,318	1.1	2.5	41.7	0.33	0.06	42
0.9	4,318	1.1	2.5	41.7	0.33	0.06	42
0.9	4,318	1.1	2.5	41.7	0.33	0.06	42
0.9	4,318	1.1	2.5	41.7	0.33	0.06	42
3.1	1,251	0.3	0.7	13.4	0.10	0.02	14
3.1	1,251	0.3	0.7	13.4	0.10	0.02	14
9.0	1,433	0.4	0.8	15.4	0.11	0.02	16
3.5	557	0.1	0.3	6.0	0.04	0.01	6
3.5	557	0.1	0.3	6.0	0.04	0.01	6
4.3	685	0.2	0.4	7.4	0.05	0.01	7
0.8	319	0.1	0.2	3.1	0.02	0.00	3
1.5	233	0.1	0.1	2.5	0.02	0.00	3
1.6	263	0.1	0.2	2.8	0.02	0.00	3
1.5	582	0.2	0.3	6.2	0.04	0.01	6
3.2	1,138	0.3	0.7	12.2	0.09	0.02	12
5.0	398	0.1	0.2	4.3	0.03	0.01	4
5.0	797	0.2	0.5	8.6	0.06	0.01	9
0.8	1,030	0.3	0.6	9.9	0.08	0.01	10
1.6	891	0.2	0.5	9.6	0.07	0.01	10
1.3	262	0.1	0.2	2.8	0.02	0.00	3
2.2	1,036	0.3	0.6	11.1	0.08	0.01	11
0.6	184	0.0	0.1	1.8	0.01	0.00	2
3.2	2,846	0.7	1.7	30.5	0.22	0.04	31
3.1	3,706	1.0	2.1	39.8	0.29	0.05	40
1.3	393	0.1	0.2	4.2	0.03	0.01	4
0.6	61	0.0	0.0	0.6	0.00	0.00	1
0.8	257	0.1	0.1	2.5	0.02	0.00	3
1.6	703	0.2	0.4	7.5	0.05	0.01	8
2.2	1,036	0.3	0.6	11.1	0.08	0.01	11
0.3	99	0.0	0.1	0.6	0.01	0.00	1
0.6	61	0.0	0.0	0.6	0.00	0.00	1
3.2	474	0.1	0.3	5.1	0.04	0.01	5
1.6	750	0.2	0.4	8.0	0.06	0.01	8
0.8	386	0.1	0.2	3.7	0.03	0.01	4
0.3	99	0.0	0.1	0.6	0.01	0.00	1
0.6	737	0.2	0.4	7.1	0.06	0.01	7
0.8	128	0.0	0.1	1.2	0.01	0.00	1
1.5	175	0.0	0.1	1.9	0.01	0.00	2
1.5	48	0.0	0.0	0.5	0.00	0.00	1
1.6	52	0.0	0.0	0.6	0.00	0.00	1
0.8	26	0.0	0.0	0.2	0.00	0.00	0
104.7	**55333**	**14**	**32**	**561.5**	**4.3**	**0.7**	**566.5**
		negligible	negligible	8.2	-	-	8
		negligible	negligible	2.6	-	-	3
				10.9			***11***
Total				**572.4**	**4.3**	**0.7**	**577**

Pacific Mall, Milpitas, CA - Construction Vehicle Trip Emissions

2013 & 2014 Air Pollutant and GHG Emissions

Average Daily Emissions

Trip Type	Ave Daily Trips	Vehicle Emissions per Day (pounds/day)				
		ROG	NOx	PM10	PM2.5	CO2
Worker Trips	71	0.26	0.31	0.19	0.06	421
Vendor Trips	35	0.45	8.15	0.45	0.28	1416
Hauling Trips	60	1.28	27.15	1.31	0.86	4563
Total	**166**	**2.0**	**35.6**	**1.9**	**1.2**	**6,401**

Annual Emissions

Trip Type	Trips	Annual Vehicle Emissions (tons per year)					CO2
		ROG	NOx	PM10	PM2.5	CO2	MT CO2/yr
Worker Trips	26,691	0.05	0.06	0.04	0.01	79	
Vendor Trips	12,999	0.08	1.52	0.08	0.05	265	
Hauling Trips	22,500	0.24	5.08	0.24	0.16	853	
Total	**62,190**	**0.37**	**6.66**	**0.36**	**0.22**	**1197**	**1,086**
Number of days for project construction =		374					

Vehicle & Trip Information

Description	Trip Length**	% LDA	%LDT	%MDT	%HDT	%HHDT
Worker Vehicles	**7.3**	50%	50%			
Vendor Trips	**12.4**				100%	
Hauling Trips	**20**					100%

** Trip length is one way distance in miles based on CalEEMod

Composite Running Emission Factors, gm/mi

Description	Vehicle Exhaust Emission Factors					Entrained Dust	
	ROG	NOx	PM10	PM2.5	CO2	PM10	PM2.5
Employee Vehicles	0.177	0.225	0.047	0.020	355.99	0.116	0.029
Vendor/Equipment Trips	0.460	8.561	0.354	0.268	1491.73	0.116	0.029
Heavy-Heavy Duty Trucks	0.477	10.229	0.378	0.295	1721.76	0.116	0.029

Emission factors for vehicle exhaust from EMFAC2011

Trip Emissions, gm/trip

Description	ROG	NOx	PM10	PM2.5	CO2
Employee Vehicles	0.355	0.328	0.004	0.003	79.77
Vendor/Equipment Trips	0.167	0.184	0.000	0.000	4.31
Heavy-Heavy Duty Trucks	0.082	0.072	0.000	0.000	1.43

Emission factors based on EMFAC2011

Entrained Roadway Dust (gm/mi)

Vehicle	PM10	PM2.5
All	0.116	0.029

EPA AP-42 Section 13.2.1

$E = k(sL)^{0.91} \times (W)^{1.02}$

Where:

k (PM2.5) =	0.25	
k (PM10) =	1.00	
sL =	0.035	g/m^2 for major & collector roads
W =	2.4	tons

Pacific Mall, Milpitas, CA
Construction Trip Calculations

Daily and Annual Trips Calculations

Construction Phase	Number of Days	Number of Daily Trips	Number of Annual Trips
Demolition	43		
Worker Trips	-	9	387
Vendor Trips	-	0	0
Haul Trips	-	12	500
Dewatering	22		
Worker Trips	-	18	396
Vendor Trips	-	0	0
Haul Trips	-	0	0
Mass Grading/Excavation	22		
Worker Trips	-	8	176
Vendor Trips	-	0	0
Haul Trips	-	1000	22000
Trenching	21		
Worker Trips	-	13	273
Vendor Trips	-	0	0
Haul Trips	-	0	0
Building - Structure - Mall	66		
Worker Trips	-	93	6138
Vendor Trips	-	48	3168
Haul Trips	-	0	0
Building - Structure - Hotel	108		
Worker Trips	-	57	6156
Vendor Trips	-	29	3132
Haul Trips	-	0	0
Building - Exterior	87		
Worker Trips	-	150	13050
Vendor Trips	-	77	6699
Haul Trips	-	0	0
Fine Grading	23		
Worker Trips	-	4	92
Vendor Trips	-	0	0
Haul Trips	-	0	0
Paving	23		
Worker Trips	-	1	23
Vendor Trips	-	0	0
Haul Trips	-	0	0
TOTAL TRIPS			
Worker Trips	-	353	26,691
Vendor Trips	-	154	12,999
Haul Trips	-	1012	22,500
Total	415		

[1]Number of daily trips based on CalEEMod.

Total Construction Days 374
17 months X 22

Pacific Mall, Milpitas - Existing

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Regional Shopping Center	267.606	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Pacific Gas & Electric Company
Climate Zone	4		2.2		
		Precipitation Freq (Days)			
			58		

1.3 User Entered Comments

Project Characteristics - CO2 Intensity Factor (452.60 lb/MWh) for 2012 obtained from CPUC GHG Calculator version 3c.

Architectural Coating - Adjusted to 150 g/L VOC in accordance with BAAQMD, Regulation 8, Rule 3.

Vehicle Trips - Project trip generation rate from projectc traffic report (Fehr & Peers, 2012).

Area Coating - Adjusted to 150 g/L VOC in accordance with BAAQMD, Regulation 8, Rule 3.

2.0 Emissions Summary

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	1.23	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
Energy	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00	0.00	677.79	677.79	0.04	0.02	683.71
Mobile	13.71	23.10	125.28	0.14	13.43	0.75	14.18	0.56	0.75	1.31	0.00	12,586.49	12,586.49	0.85	0.00	12,604.44
Waste						0.00	0.00		0.00	0.00	57.04	0.00	57.04	3.37	0.00	127.83
Water						0.00	0.00		0.00	0.00	0.00	30.97	30.97	0.61	0.02	48.60
Total	**14.94**	**23.13**	**125.31**	**0.14**	**13.43**	**0.75**	**14.18**	**0.56**	**0.75**	**1.31**	**57.04**	**13,295.25**	**13,352.29**	**4.87**	**0.04**	**13,464.58**

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	1.23	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
Energy	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00	0.00	677.79	677.79	0.04	0.02	683.71
Mobile	13.71	23.10	125.28	0.14	13.43	0.75	14.18	0.56	0.75	1.31	0.00	12,586.49	12,586.49	0.85	0.00	12,604.44
Waste						0.00	0.00		0.00	0.00	57.04	0.00	57.04	3.37	0.00	127.83
Water						0.00	0.00		0.00	0.00	0.00	30.97	30.97	0.61	0.02	48.60
Total	**14.94**	**23.13**	**125.31**	**0.14**	**13.43**	**0.75**	**14.18**	**0.56**	**0.75**	**1.31**	**57.04**	**13,295.25**	**13,352.29**	**4.87**	**0.04**	**13,464.58**

4.0 Mobile Detail

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	13.71	23.10	125.28	0.14	13.43	0.75	14.18	0.56	0.75	1.31	0.00	12,586.49	12,586.49	0.85	0.00	12,604.44
Unmitigated	13.71	23.10	125.28	0.14	13.43	0.75	14.18	0.56	0.75	1.31	0.00	12,586.49	12,586.49	0.85	0.00	12,604.44
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		

Regional Shopping Center	16,166.08	18,818.05	9505.37	27,339,986	27,339,986
Total	16,166.08	18,818.05	9,505.37	27,339,986	27,339,986

4.3 Trip Type Information

	Miles			Trip %		
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
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00

5.0 Energy Detail

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						0.00	0.00		0.00	0.00	0.00	642.23	642.23	0.04	0.02	647.93
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	642.23	642.23	0.04	0.02	647.93
NaturalGas Mitigated	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00	0.00	35.56	35.56	0.00	0.00	35.77
NaturalGas Unmitigated	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00	0.00	35.56	35.56	0.00	0.00	35.77
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	tons/yr										MT/yr					
Parking Lot	0	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
Regional Shopping Center	666339	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00	0.00	35.56	35.56	0.00	0.00	35.77
Total		**0.00**	**0.03**	**0.03**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**35.56**	**35.56**	**0.00**	**0.00**	**35.77**

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	tons/yr										MT/yr					
Parking Lot	0	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
Regional Shopping Center	666339	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00	0.00	35.56	35.56	0.00	0.00	35.77
Total		**0.00**	**0.03**	**0.03**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**35.56**	**35.56**	**0.00**	**0.00**	**35.77**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Parking Lot	0					0.00	0.00	0.00	0.00
Regional Shopping Center	3.12831e+006					642.23	0.04	0.02	647.93
Total						**642.23**	**0.04**	**0.02**	**647.93**

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Parking Lot	0					0.00	0.00	0.00	0.00
Regional Shopping Center	3.12831e+006					642.23	0.04	0.02	647.93
Total						**642.23**	**0.04**	**0.02**	**647.93**

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	1.23	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
Unmitigated	1.23	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.19					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Consumer Products	1.05					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**1.24**	**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**

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	0.19					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	1.05					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**1.24**	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					30.97	0.61	0.02	48.60
Unmitigated					30.97	0.61	0.02	48.60

Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Parking Lot	0 / 0					0.00	0.00	0.00	0.00
Regional Shopping Center	19.8225 / 12.1493					30.97	0.61	0.02	48.60
Total						**30.97**	**0.61**	**0.02**	**48.60**

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Parking Lot	0 / 0					0.00	0.00	0.00	0.00
Regional Shopping Center	19.8225 / 12.1493					30.97	0.61	0.02	48.60
Total						**30.97**	**0.61**	**0.02**	**48.60**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					57.04	3.37	0.00	127.83
Unmitigated					57.04	3.37	0.00	127.83
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Parking Lot	0					0.00	0.00	0.00	0.00
Regional Shopping Center	280.99					57.04	3.37	0.00	127.83
Total						**57.04**	**3.37**	**0.00**	**127.83**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Parking Lot	0					0.00	0.00	0.00	0.00
Regional Shopping Center	280.99					57.04	3.37	0.00	127.83
Total						**57.04**	**3.37**	**0.00**	**127.83**

9.0 Vegetation

Pacific Mall, Milpitas - 2015

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Hotel	250	Room
Regional Shopping Center	420.082	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Pacific Gas & Electric Company
Climate Zone	4		2.2		
		Precipitation Freq (Days)			
			58		

1.3 User Entered Comments

Project Characteristics - CO2 Intensity Factor (391.16 lb/MWh) for 2015 obtained from CPUC GHG Calculator version 3c.

Vehicle Trips - Project trip generation rate from projectc traffic report (Fehr & Peers, 2012).

Area Coating - Adjusted to 150 g/L VOC in accordance with BAAQMD, Regulation 8, Rule 3.

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.75	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
Energy	0.05	0.46	0.38	0.00		0.00	0.03		0.00	0.03	0.00	1,636.97	1,636.97	0.09	0.04	1,651.71
Mobile	13.43	22.62	119.49	0.17	16.72	0.84	17.55	0.70	0.84	1.53	0.00	15,238.68	15,238.68	0.73	0.00	15,254.03
Waste						0.00	0.00		0.00	0.00	117.32	0.00	117.32	6.93	0.00	262.92
Water						0.00	0.00		0.00	0.00	0.00	48.66	48.66	1.15	0.03	81.96
Total	**16.23**	**23.08**	**119.87**	**0.17**	**16.72**	**0.84**	**17.58**	**0.70**	**0.84**	**1.56**	**117.32**	**16,924.31**	**17,041.63**	**8.90**	**0.07**	**17,250.62**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.75	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
Energy	0.05	0.42	0.35	0.00		0.00	0.03		0.00	0.03	0.00	1,507.99	1,507.99	0.09	0.04	1,521.59
Mobile	13.43	22.62	119.49	0.17	16.72	0.84	17.55	0.70	0.84	1.53	0.00	15,238.68	15,238.68	0.73	0.00	15,254.03
Waste						0.00	0.00		0.00	0.00	105.59	0.00	105.59	6.24	0.00	236.63
Water						0.00	0.00		0.00	0.00	0.00	43.80	43.80	1.03	0.03	73.76
Total	**16.23**	**23.04**	**119.84**	**0.17**	**16.72**	**0.84**	**17.58**	**0.70**	**0.84**	**1.56**	**105.59**	**16,790.47**	**16,896.06**	**8.09**	**0.07**	**17,086.01**

4.0 Mobile Detail

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	13.43	22.62	119.49	0.17	16.72	0.84	17.55	0.70	0.84	1.53	0.00	15,238.68	15,238.68	0.73	0.00	15,254.03
Unmitigated	13.43	22.62	119.49	0.17	16.72	0.84	17.55	0.70	0.84	1.53	0.00	15,238.68	15,238.68	0.73	0.00	15,254.03
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	2,042.50	2,047.50	1487.50	3,731,328	3,731,328
Regional Shopping Center	17,916.50	20,857.07	10535.66	30,300,918	30,300,918
Total	19,959.00	22,904.57	12,023.16	34,032,246	34,032,246

4.3 Trip Type Information

	Miles			Trip %		
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
Hotel	9.50	7.30	7.30	19.40	61.60	19.00
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	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						0.00	0.00		0.00	0.00	0.00	1,055.19	1,055.19	0.08	0.03	1,066.03
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	1,138.89	1,138.89	0.08	0.03	1,150.59
NaturalGas Mitigated	0.05	0.42	0.35	0.00		0.00	0.03		0.00	0.03	0.00	452.80	452.80	0.01	0.01	455.56
NaturalGas Unmitigated	0.05	0.46	0.38	0.00		0.00	0.03		0.00	0.03	0.00	498.08	498.08	0.01	0.01	501.12
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	tons/yr										MT/yr					
Hotel	8.28773e+006	0.04	0.41	0.34	0.00		0.00	0.03		0.00	0.03	0.00	442.27	442.27	0.01	0.01	444.96
Regional Shopping Center	1.046e+006	0.01	0.05	0.04	0.00		0.00	0.00		0.00	0.00	0.00	55.82	55.82	0.00	0.00	56.16
Total		**0.05**	**0.46**	**0.38**	**0.00**		**0.00**	**0.03**		**0.00**	**0.03**	**0.00**	**498.09**	**498.09**	**0.01**	**0.01**	**501.12**

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	tons/yr										MT/yr					

Hotel	7.54384e+006	0.04	0.37	0.31	0.00		0.00	0.03		0.00	0.03	0.00	402.57	402.57	0.01	0.01	405.02
Regional Shopping Center	941404	0.01	0.05	0.04	0.00		0.00	0.00		0.00	0.00	0.00	50.24	50.24	0.00	0.00	50.54
Total		**0.05**	**0.42**	**0.35**	**0.00**		**0.00**	**0.03**		**0.00**	**0.03**	**0.00**	**452.81**	**452.81**	**0.01**	**0.01**	**455.56**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Hotel	1.50816e+006					267.59	0.02	0.01	270.34
Regional Shopping Center	4.91076e+006					871.30	0.06	0.02	880.25
Total						**1,138.89**	**0.08**	**0.03**	**1,150.59**

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Hotel	1.41488e+006					251.04	0.02	0.01	253.62
Regional Shopping Center	4.53226e+006					804.15	0.06	0.02	812.41
Total						**1,055.19**	**0.08**	**0.03**	**1,066.03**

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	2.75	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
Unmitigated	2.75	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.42					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	2.34					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**2.76**	**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**

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	0.42					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	2.34					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Landscaping	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
Total	**2.76**	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Install Low Flow Bathroom Faucet

Install Low Flow Toilet

Use Water Efficient Irrigation System

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					43.80	1.03	0.03	73.76
Unmitigated					48.66	1.15	0.03	81.96
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Hotel	6.34169 / 0.704632					6.60	0.19	0.00	12.22

Regional Shopping Center	31.1164 / 19.0713					42.07	0.95	0.02	69.74
Total						**48.67**	**1.14**	**0.02**	**81.96**

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Hotel	5.70752 / 0.634169					5.94	0.17	0.00	11.00
Regional Shopping Center	28.0047 / 17.1642					37.86	0.86	0.02	62.77
Total						**43.80**	**1.03**	**0.02**	**73.77**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					105.59	6.24	0.00	236.63
Unmitigated					117.32	6.93	0.00	262.92
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Hotel	136.88					27.79	1.64	0.00	62.27
Regional Shopping Center	441.08					89.54	5.29	0.00	200.65
Total						**117.33**	**6.93**	**0.00**	**262.92**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Hotel	123.192					25.01	1.48	0.00	56.04
Regional Shopping Center	396.972					80.58	4.76	0.00	180.59
Total						**105.59**	**6.24**	**0.00**	**236.63**

9.0 Vegetation

Pacific Mall, Milpitas - 2020

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Hotel	250	Room
Regional Shopping Center	420.082	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Pacific Gas & Electric Company
Climate Zone	4		2.2		
		Precipitation Freq (Days)			
			58		

1.3 User Entered Comments

Project Characteristics - CO2 Intensity Factor (289.85 lb/MWh) for 2020 obtained from CPUC GHG Calculator version 3c.

Vehicle Trips - Project trip generation rate from projectc traffic report (Fehr & Peers, 2012).

Area Coating - Adjusted to 150 g/L VOC in accordance with BAAQMD, Regulation 8, Rule 3.

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.75	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
Energy	0.05	0.46	0.38	0.00		0.00	0.03		0.00	0.03	0.00	1,342.00	1,342.00	0.09	0.04	1,356.74
Mobile	10.03	15.81	81.39	0.17	16.72	0.75	17.47	0.28	0.70	0.98	0.00	12,962.42	12,962.42	0.58	0.00	12,974.67
Waste						0.00	0.00		0.00	0.00	117.32	0.00	117.32	6.93	0.00	262.92
Water						0.00	0.00		0.00	0.00	0.00	36.17	36.17	1.15	0.03	69.47
Total	**12.83**	**16.27**	**81.77**	**0.17**	**16.72**	**0.75**	**17.50**	**0.28**	**0.70**	**1.01**	**117.32**	**14,340.59**	**14,457.91**	**8.75**	**0.07**	**14,663.80**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.75	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
Energy	0.05	0.42	0.35	0.00		0.00	0.03		0.00	0.03	0.00	1,234.70	1,234.70	0.09	0.04	1,248.30
Mobile	10.03	15.81	81.39	0.17	16.72	0.75	17.47	0.28	0.70	0.98	0.00	12,962.42	12,962.42	0.58	0.00	12,974.67
Waste						0.00	0.00		0.00	0.00	105.59	0.00	105.59	6.24	0.00	236.63
Water						0.00	0.00		0.00	0.00	0.00	32.55	32.55	1.03	0.03	62.52
Total	**12.83**	**16.23**	**81.74**	**0.17**	**16.72**	**0.75**	**17.50**	**0.28**	**0.70**	**1.01**	**105.59**	**14,229.67**	**14,335.26**	**7.94**	**0.07**	**14,522.12**

4.0 Mobile Detail

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	10.03	15.81	81.39	0.17	16.72	0.75	17.47	0.28	0.70	0.98	0.00	12,962.42	12,962.42	0.58	0.00	12,974.67
Unmitigated	10.03	15.81	81.39	0.17	16.72	0.75	17.47	0.28	0.70	0.98	0.00	12,962.42	12,962.42	0.58	0.00	12,974.67
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT

Hotel	2,042.50	2,047.50	1487.50	3,731,328	3,731,328
Regional Shopping Center	17,916.50	20,857.07	10535.66	30,300,918	30,300,918
Total	19,959.00	22,904.57	12,023.16	34,032,246	34,032,246

4.3 Trip Type Information

	Miles			Trip %		
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
Hotel	9.50	7.30	7.30	19.40	61.60	19.00
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	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						0.00	0.00		0.00	0.00	0.00	781.89	781.89	0.08	0.03	792.74
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	843.92	843.92	0.08	0.03	855.62
NaturalGas Mitigated	0.05	0.42	0.35	0.00		0.00	0.03		0.00	0.03	0.00	452.80	452.80	0.01	0.01	455.56
NaturalGas Unmitigated	0.05	0.46	0.38	0.00		0.00	0.03		0.00	0.03	0.00	498.08	498.08	0.01	0.01	501.12
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	tons/yr										MT/yr					
Hotel	8.28773e+006	0.04	0.41	0.34	0.00		0.00	0.03		0.00	0.03	0.00	442.27	442.27	0.01	0.01	444.96
Regional Shopping Center	1.046e+006	0.01	0.05	0.04	0.00		0.00	0.00		0.00	0.00	0.00	55.82	55.82	0.00	0.00	56.16
Total		**0.05**	**0.46**	**0.38**	**0.00**		**0.00**	**0.03**		**0.00**	**0.03**	**0.00**	**498.09**	**498.09**	**0.01**	**0.01**	**501.12**

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	tons/yr										MT/yr					
Hotel	7.54384e+006	0.04	0.37	0.31	0.00		0.00	0.03		0.00	0.03	0.00	402.57	402.57	0.01	0.01	405.02
Regional Shopping Center	941404	0.01	0.05	0.04	0.00		0.00	0.00		0.00	0.00	0.00	50.24	50.24	0.00	0.00	50.54
Total		**0.05**	**0.42**	**0.35**	**0.00**		**0.00**	**0.03**		**0.00**	**0.03**	**0.00**	**452.81**	**452.81**	**0.01**	**0.01**	**455.56**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Hotel	1.50816e+006					198.28	0.02	0.01	201.03
Regional Shopping Center	4.91076e+006					645.64	0.06	0.02	654.59
Total						**843.92**	**0.08**	**0.03**	**855.62**

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Hotel	1.41488e+006					186.02	0.02	0.01	188.60
Regional Shopping Center	4.53226e+006					595.87	0.06	0.02	604.14
Total						**781.89**	**0.08**	**0.03**	**792.74**

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	2.75	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
Unmitigated	2.75	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.42					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	2.34					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**2.76**	**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**

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	0.42					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	2.34					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**2.76**	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Install Low Flow Bathroom Faucet

Install Low Flow Toilet

Use Water Efficient Irrigation System

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					32.55	1.03	0.03	62.52
Unmitigated					36.17	1.15	0.03	69.47
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Hotel	6.34169 / 0.704632					4.91	0.19	0.00	10.53
Regional Shopping Center	31.1164 / 19.0713					31.26	0.95	0.02	58.94
Total						**36.17**	**1.14**	**0.02**	**69.47**

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Hotel	5.70752 / 0.634169					4.42	0.17	0.00	9.47
Regional Shopping Center	28.0047 / 17.1642					28.14	0.86	0.02	53.04
Total						**32.56**	**1.03**	**0.02**	**62.51**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					105.59	6.24	0.00	236.63
Unmitigated					117.32	6.93	0.00	262.92
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Hotel	136.88					27.79	1.64	0.00	62.27
Regional Shopping Center	441.08					89.54	5.29	0.00	200.65
Total						**117.33**	**6.93**	**0.00**	**262.92**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Hotel	123.192					25.01	1.48	0.00	56.04

Regional Shopping Center	396.972					80.58	4.76	0.00	180.59
Total						**105.59**	**6.24**	**0.00**	**236.63**

9.0 Vegetation

Pacific Mall, Milpitas - 2014 Arch. Construction Coating

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Hotel	250	Room
Regional Shopping Center	292.186	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Pacific Gas & Electric Company
Climate Zone	4		2.2		
		Precipitation Freq (Days)			
			58		

1.3 User Entered Comments

Architectural Coating - Adjusted to 150 g/L VOC in accordance with BAAQMD, Regulation 8, Rule 3.

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					

2014	3.27	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
Total	**3.27**	**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**

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					
2014	3.27	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
Total	**3.27**	**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

3.7 Architectural Coating - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.27					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	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
Total	**3.27**	**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**

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	0.00	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
Vendor	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
Worker	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
Total	**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**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.27					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	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
Total	**3.27**	**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**

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	0.00	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
Vendor	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
Worker	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
Total	**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**