APPENDIX A

AIR QUALITY AND GREENHOUSE GAS EMISSIONS TECHNICAL MEMORANDUM

Technical Memorandum

DATE	November 13, 2012
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SUBJECT	Air Quality and Greenhouse Gas Emissions Technical Memorandum for the Castro Village Expansion
PROJECT NO.	RTNC-01

Air Quality and GHG Emissions Technical Memorandum

The Castro Village Expansion Air Quality and Greenhouse Gas (GHG) Emissions Technical Memorandum has been prepared to analyze potential criteria air pollutant and GHG emissions impacts from construction and operation of the Castro Village Expansion Project (Project). The air quality and GHG emissions analysis includes an evaluation of the impacts of the Project compared to the significance criteria adopted by the Bay Area Air Quality Management District (BAAQMD).

AIR QUALITY ENVIRONMENTAL SETTING

San Francisco Area Air Basin

Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions. The Project site is in the San Francisco Bay Area Air Basin (SFBAAB) and is subject to the rules and regulations imposed by the Bay Area Air Quality Management District (BAAQMD), as well as the California Ambient Air Quality Standards (AAQS) adopted by the California Air Resources Board (CARB) and National AAQS adopted by the U.S. Environmental Protection Agency (EPA). The SFBAAB comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties; the southern portion of Sonoma County, and the southwestern portion of Solano County.

Regulatory Framework

Federal, State, regional and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed Project are summarized below.

Ambient Air Quality Standards

The Clean Air Act was passed in 1963 by the U.S. Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollution species.

The California Clean Air Act, signed into law in 1988, requires all areas of the State to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS, based on even greater health and welfare concerns.

The National and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants. As shown in Table 1, these pollutants include ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Air Pollutants of Concern

Criteria Air Pollutants

The pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and State law. Air pollutants are categorized as primary and/or secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO_x), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that AAQS have been established for them. ROG and NO_2 are Criteria Pollutant precursors that form secondary Criteria Air Pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants.

Table 1
Ambient Air Quality Standards for Criteria Pollutants

POLLUTANT	AVERAGING TIME	CALIFORNIA STANDARD	FEDERAL PRIMARY STANDARD	MAJOR POLLUTANT SOURCES
Ozone (O_3)	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.075 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Average	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm[2]	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm[1]	
	24 hours	0.04 ppm	0.14 ppm[2]	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 μg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 μg/m^3	150 μg/m^3	
Respirable Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 μg/m^3	15 μg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 μg/m^3	
Lead (Pb)	Monthly	1.5 μg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Quarterly	*	1.5 μg/m^3	
	3-Month Average	*	0.15 μg/m^3	
Sulfates (SO_4)	24 hours	25 μg/m^3	*	Industrial processes.

Table 1
Ambient Air Quality Standards for Criteria Pollutants

POLLUTANT	AVERAGING TIME	CALIFORNIA STANDARD	FEDERAL PRIMARY STANDARD	MAJOR POLLUTANT SOURCES
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles[1]	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hour	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: California Air Resources Board (CARB), 2010. Ambient Air Quality Standards, http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

ppm: parts per million; $\mu g/m^3$: micrograms per cubic meter

[1] When relative humidity is less than 70 percent.

[2] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

* Standard has not been established for this pollutant/duration by this entity.

Toxic Air Contaminants

Public exposure to TACs is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The California Health and Safety Code define a TAC as "an air

pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code §7412[b]) is a toxic air contaminant. Under State law, the California Environmental Protection Agency (Cal/EPA), acting through CARB, is authorized to identify a substance as a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (i.e. a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs, all of which are identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment (HRA) and, if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs.[1] Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

In 1998, CARB identified DPM as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particles are 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs.

The BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area. Based on the annual emissions inventory of TACs for the SFBAAB, DPM was found to account for approximately 80 percent of the cancer risk from airborne toxics. The highest DPM concentrations occur in the urban core areas of eastern San Francisco, western Alameda, and northwestern Santa Clara counties. The major contributor to acute and chronic non-cancer health effects in the SFBAAB is acrolein (C_3H_4O). Major sources of acrolein include on-road mobile sources and aircrafts near freeways and commercial and military airports.[2] Currently CARB does not have certified emission factors or an analytical test method for acrolein. Since the appropriate tools needed to implement and enforce acrolein

[1] California Air Resources Board (CARB), 1999. Final Staff Report: Update to the Toxic Air Contaminant List.
[2] Bay Area Air Quality Management District (BAAQMD), 2006. Community Air Risk Evaluation Program, Phase I Findings and Policy Recommendations Related to Toxic Air Contaminants in the San Francisco Bay Area.

emission limits are not available, BAAQMD does not conduct a health risk screening analysis for acrolein emissions.[3]

Air Quality Management Planning

Air quality conditions in the SFBAAB have improved significantly since the BAAQMD was created in 1955.[4] The BAAQMD prepares air quality management plans (AQMPs) to attain ambient air quality standards in the SFBAAB. The BAAQMD prepares Ozone Attainment Plans (OAPs) for the National O_3 standard and Clean Air Plans for the California O_3 standard. The BAAQMD prepares these AQMPs in coordination with the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC). The most recent adopted comprehensive plan is the 2010 Bay Area Clean Air Plan, which was adopted on September 15, 2010, and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools.

The purpose of the 2010 Clean Air Plan is to: 1) update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California Clean Air Act to implement all feasible measures to reduce O_3; 2) consider the impacts of O_3 control measures on PM, TAC, and greenhouse gases (GHGs) in a single, integrated plan; 3) review progress in improving air quality in recent years; and 4) establish emission control measures to be adopted or implemented in the 2009 to 2012 timeframe. The 2010 Clean Air Plan also provides the framework for SFBAAB to achieve attainment of the California AAQS. Areas that meet AAQS are classified attainment areas, while areas that do not meet these standards are classified nonattainment areas. Severity classifications for O_3 range from marginal, moderate, and serious to severe and extreme. The attainment status for the SFBAAB is shown in Table 2. The SFBAAB is currently designated as a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS.

[3] Bay Area Air Quality Management District (BAAQMD), 2010. Air Toxics NSR Program, Health Risk Screening Analysis Guidelines.
[4] Bay Area Air Quality Management District (BAAQMD), 2012 (Revised). California Environmental Quality Act Air Quality Guidelines, Appendix C: Sample Air Quality Setting.

Table 2
Attainment Status of Criteria Pollutants in the San Francisco Bay Area Air Basin

POLLUTANT	FEDERAL	STATE
Ozone – 1-hour	Nonattainment	Nonattainment
Ozone – 8-hour	Classification Revoked (2005)	Nonattainment (serious)
PM_{10}	Unclassified	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
All others	Unclassified	Attainment/Unclassified

Source: California Air Resources Board (CARB). 2011, June 23. Area Designations: Activities and Maps. http://www.arb.ca.gov/desig/adm/adm.htm.

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of the Project site are best documented by measurements made by the BAAQMD. The air quality monitoring station closest to the Project site is the Hayward – La Mesa Monitoring Station. However, this station does not monitor all criteria air pollutants. Therefore, data from three other stations were used: Livermore – Rincon Avenue Monitoring Station, Berkely – 6th Street Monitoring Station, and Oakland – West Monitoring Station. Data from these stations are summarized in Table 3. The data show occasional violations of both the state and federal O_3 standards. The federal $PM_{2.5}$ standard showed occasional exceedances. The PM_{10}, CO, SO_2, and NO_2 standards have not been exceeded in the last five years in the Project vicinity.

Table 3
Ambient Air Quality Monitoring Summary

POLLUTANT/STANDARD	2007	2008	2009	2010	2011
Ozone[1]					
State 1-Hour $\geq$ 0.09 ppm (days exceed threshold)	0	1	4	3	0
State 8-Hour > 0.070 ppm (days exceed threshold)	0	3	4	6	0
Federal 8-Hour > 0.075 ppm (days exceed threshold)	0	1	3	3	0
Max. 1-Hour Conc. (ppm)	0.075	0.114	0.107	0.150	0.088
Max. 8-Hour Conc. (ppm)	0.065	0.087	0.081	0.098	0.070
Carbon Monoxide[2]					
State 8-Hour > 9 ppm (days exceed threshold)	0	0	0	0	0
Federal 8-Hour $\geq$ 9 ppm (days exceed threshold)	0	0	0	0	0
Max. 8-Hour Conc. (ppm)	1.83	1.43	1.31	1.69	2.65
Nitrogen Dioxide[2]					
State 1-Hour $\geq$ 0.18 ppm (days exceed threshold)	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.052	0.058	0.052	0.058	0.057
Sulfur Dioxide[3]					
State 24-Hour ≥ 0.04 ppm (days exceed threshold)	0	0	0	0	0
Federal 24-Hour ≥ 0.14 ppm (days exceed threshold)	0	0	0	0	0
Max 24-Hour Conc. (ppm)	0.005	0.005	0.005	0.004	0.003
Coarse Particulates (PM_{10})[4]					
State 24-Hour > 50 $\mu g/m^3$ (days exceed threshold)	0	0	0	0	NA
Federal 24-Hour > 150 $\mu g/m^3$ (days exceed threshold)	0	0	0	0	NA
Max. 24-Hour Conc. ($\mu g/m^3$)	35.8	43.5	33.5	42.8	NA
Fine Particulates ($PM_{2.5}$)[2]					
Federal 24-Hour > 35 $\mu g/m^3$ (days exceed threshold)	3	2	4	0	2
Max. 24-Hour Conc. ($\mu g/m^3$)	54.9	52.7	45.7	34.7	45.4

Source: California Air Resources Board (CARB), 2012. Air Pollution Data Monitoring Cards (2007, 2008, 2009, 2010, and 2011), http://www.arb.ca.gov/adam/index.html.

ppm: parts per million; $\mu g/m^3$: micrograms per cubic meter

[1] Data collected from the Hayward-La Mesa Monitoring Station except for year 2010, which was collected from the Livermore-Rincon Avenue Monitoring Station.

[2] Data collected from the Livermore-Rincon Avenue Monitoring Station.

[3] Data collected from the Berkeley – 6th Street Monitoring Station for 2007 and 2008 and the Oakland – West Monitoring Station for 2009 through 2011.

[4] Data collected from the Berkeley – 6th Street Monitoring Station.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases.

Residential areas are also considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution.

Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

The closest sensitive receptors to the Project site are single- and multi-family homes located north of the project site (approximately 70 feet from the Project boundary).

GREENHOUSE GAS EMISSIONS ENVIRONMENTAL SETTING

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as greenhouse gases (GHGs), to the atmosphere. The primary source of these GHGs is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor, carbon dioxide (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons.[5] [6]

Regulatory Framework

Federal Laws and Regulations

The U.S. Environmental Protection Agency (EPA) announced on December 7, 2009 that GHG emissions threaten the public health and welfare of the American people, and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements, but allow the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation.[7]

The EPA's endangerment finding covers emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world (the first three of which are applicable to the proposed Project).

[5] Intergovernmental Panel on Climate Change, 2001, Third Assessment Report: Climate Change 2001, New York: Cambridge University Press.
[6] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant.
[7] United States Environmental Protection Agency, 2009, EPA: Greenhouse Gases Threaten Public Health and the Environment. Science overwhelmingly shows greenhouse gas concentrations at unprecedented levels due to human activity, http://yosemite.epa.gov/opa/admpress.nsf/0/08D11A451131BCA585257685005BF252, accessed on February 8, 2012.

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 metric tons (MTons) or more per year are required to submit an annual report.

State Laws and Regulations

Assembly Bill 32, the Global Warming Solutions Act

Current State of California law, guidance, and goals for reductions in GHG emissions are generally embodied in AB 32, the Global Warming Solutions Act, and Executive Order S-03-05. AB 32 was passed by the California State legislature on August 31, 2006 to place the State on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-3-05, signed June 1, 2005. Executive Order S-03-05 set the following GHG reduction targets for the State:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

AB 32 directed CARB to adopt discrete early action measures to reduce GHG emissions and outline additional reduction measures to meet the 2020 target. Based on the GHG emissions inventory conducted for the Scoping Plan by CARB, GHG emissions in California by 2020 are anticipated to be approximately 596 million metric tons. In December 2007, CARB approved a 2020 emissions limit of 427 MMTons (471 million tons) for the state. The 2020 target requires a total emissions reduction of 169 MMTons, 28.5 percent from the projected emissions of the business-as-usual (BAU) scenario for the year 2020 (i.e., 28.5 percent of 596 MMTons).[8] [9]

Since release of the 2008 Scoping Plan, CARB has updated the statewide GHG emissions inventory to reflect GHG emissions in light of the economic downturn and measures not previously considered within the 2008 Scoping Plan baseline inventory. The updated forecast predicts emissions to be 507 MMTons by 2020. The new inventory identifies that an estimated 80 MMTons of reductions are necessary to achieve the statewide emissions reduction of AB 32 by 2020, 15.7 percent of the projected emissions compared to BAU in year 2020 (i.e., 15.7 percent of 507 MMTons).[10]

Regulation of GHG Emissions on a Regional Level

In 2008, Senate Bill 375 (SB 375), the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 17 regions

[8] California Air Resources Board, 2008, Climate Change Proposed Scoping Plan, a Framework for Change.
[9] CARB defines BAU in its Scoping Plan as emissions levels that would occur if California continued to grow and add new GHG emissions but did not adopt any measures to reduce emissions. Projections for each emission-generating sector were compiled and used to estimate emissions for 2020 based on 2002–2004 emissions intensities. Under CARB's definition of BAU, new growth is assumed to have the same carbon intensities as was typical from 2002 through 2004.
[10] California Air Resources Board (CARB). 2012. Status of Scoping Plan Recommended Measures. http://www.arb.ca.gov/cc/scopingplan/status_of_scoping_plan_measures.pdf

in California managed by a metropolitan planning organization (MPO). MTC is the MPO for the nine-county San Francisco Bay Area region. MTC's targets are a 7 percent per capita reduction from 2005 by 2020, and a 15 percent per capita reduction from 2005 by 2035.[11]

SB 375 requires MPOs to prepare a Sustainable Communities Strategy (SCS) in their regional transportation plan. For the MTC region, the first SCS is anticipated by April 2013. The SCS sets forth a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement). The SCS is meant to provide individual jurisdictions with growth strategies that, when taken together, achieve the regional GHG emissions reduction targets. The SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS, but provides incentives for consistency to governments and developers. If the SCS is unable to achieve the regional GHG emissions reduction targets, the MPO is required to prepare an Alternative Planning Strategy that shows how the GHG emissions reduction target could be achieved through other development patterns, infrastructure, and/or transportation measures.

METHODOLOGY

Projected-related air pollutant emissions are calculated using the California Emissions Estimator Model (CalEEMod), Version 2011.1.1. CalEEMod compiles an emissions inventory of construction, area, energy (natural gas and purchased energy [greenhouse gas emissions only]), water (greenhouse gas emissions only), waste (greenhouse gas emissions only), and vehicle emissions sources. The BAAQMD's *CEQA Air Quality Guidelines* include methodology and thresholds for criteria air pollutant impacts and community health risk.[12] The BAAQMD's Guidelines include screening criteria and significance criteria that would be applicable to the proposed Project. If a project exceeds the screening level, it would be required to conduct a full analysis using the BAAQMD's significance criteria.

Criteria Air Pollutants

Regional Significance Criteria

BAAQMD's criteria for regional significance for projects that exceed the screening thresholds are shown in Table 4. Criteria for both the construction and operational phases of the Project are shown.

[11] California Air Resources Board, 2010, Staff Report Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375.

[12] On March 5, 2012, the Court issued a ruling in California Building Industry Association v. Bay Area Air Quality Management District (Superior Court Case No. RG10548693). Pursuant to the ruling, the Court found that the adoption of the BAAQMD's CEQA Guidelines is a "project" requiring CEQA review. No CEQA review was conducted for the CEQA Guidelines prior to their adoption. Therefore, the Court set aside adoption of the BAAQMD CEQA Guidelines for determining the significance of air quality and greenhouse gas emissions. The Court also ordered BAAQMD to take no further action to disseminate those standards before performing CEQA review related to issuing the standards. While adoption of the thresholds was set aside until an environmental evaluation is conducted, BAAQMD's GHG significance criteria, as outlined in their Draft CEQA Guidelines, are supported by extensive studies and analysis. Accordingly, pursuant to its discretion under CEQA Guidelines section 15064 (b), the City has decided to apply the BAAQMD CEQA thresholds to the proposed Project.

Table 4
Regional Project-Level Criteria Air Pollutant Thresholds

POLLUTANT	CONSTRUCTION (LBS/DAY)	OPERATIONAL	
		AVERAGE DAILY (LBS/DAY)	MAXIMUM ANNUAL (TPY)
Reactive Organic Gases (ROGs) / Volatile Organic Compounds (VOCs)	54	54	10
Oxides of Nitrogen (NO_x)	54	54	10
Coarse Inhalable Particulate Matter (PM_{10})	82 (exhaust)	82	15
Fine Inhalable Particulate Matter ($PM_{2.5}$)	54 (exhaust)	54	10
PM_{10}/$PM_{2.5}$ Fugitive Dust	BMPs[1]	N/A	N/A

Source: Bay Area Air Quality Management District (BAAQMD), 2012 (Revised). California Environmental Quality Act Air Quality Guidelines.
Notes: lbs: pounds; tpy: tons per year; BMPs: Best Management Practices; N/A: not applicable
[1] Construction activities are required to implement the BAAQMD's Basic Construction Mitigation Measures for fugitive dust control.

CO Hotspot Analysis

Congested intersections have the potential to create elevated concentrations of CO, referred to as CO hotspots. The significance criteria for CO hotspots are based on the California AAQS for CO, which is 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average). However, with the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology, the SFBAAB is in attainment of the California and National AAQS, and CO concentrations in the SFBAAB have steadily declined. Because CO concentrations have improved, the BAAQMD does not require a CO hotspot analysis if the following criteria are met:

- Project is consistent with an applicable congestion management program established by the County Congestion Management Agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans

- The Project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour

- The Project traffic would not increase traffic volumes at affected intersection to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g. tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact.[13] Therefore, the potential for CO hotspots to be generated in the SFBAAB is extremely unlikely because of the improvements in vehicle emission rates and control

[13] Bay Area Air Quality Management District (BAAQMD), 2012 (Revised). California Environmental Quality Act Air Quality Guidelines.

efficiencies. Typical projects would not expose sensitive receptors to substantial pollutant concentrations and analysis of CO hotspots is not warranted.

Odors

The BAAQMD's thresholds for odors are qualitative. The BAAQMD does not consider odors generated from use of construction equipment and activities to be objectionable. For operational phase odor impacts, a project that would result in the siting of a new source of odor or exposure of a new receptor to existing or planned odor sources should consider odor impacts. The BAAQMD considers potential odor impacts to be significant if there are five confirmed complaints per year from a facility, averaged over three years. The BAAQMD has established odor screening thresholds for land uses that have the potential to generate substantial odor complaints, including wastewater treatment plants, landfills or transfer stations, composting facilities, confined animal facilities, food manufacturing, and chemical plants. [14]

Community Risk and Hazards

The BAAQMD's significance thresholds for local community risk and hazard impacts apply to both the siting of a new source and to the siting of a new receptor. Local community risk and hazard impacts are associated with TACs and $PM_{2.5}$ because emissions of these pollutants can have significant health impacts at the local level. For assessing community risk and hazards, sources within a 1,000-foot radius are considered.[15] Sources are defined as freeways, high volume roadways (with volume of 10,000 vehicles or more per day or 1,000 trucks per day), and permitted sources.

Siting a New Receptor: Project-Level Community Risk

Project-level emissions of TACs or $PM_{2.5}$ from individual sources within 1,000 feet of the Project that exceed any of the thresholds listed below are considered a potentially significant community health risk:

- Non-compliance with a qualified Community Risk Reduction Plan;
- An excess cancer risk level of more than 10 in one million, or a non-cancer (i.e. chronic or acute) hazard index greater than 1.0 would be a significant cumulatively considerable contribution;
- An incremental increase of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$) annual average $PM_{2.5}$ from a single source would be a significant cumulatively considerable contribution. [16]

Siting a New Receptor: Cumulative Community Risk

Cumulative sources represent the combined total risk values of each of the individual sources within the 1,000-foot evaluation zone. A project would have a cumulative considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from the fence line of a source or location of a receptor, plus the contribution from the Project, exceeds the following:

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[14] Bay Area Air Quality Management District (BAAQMD), 2012 (Revised). California Environmental Quality Act Air Quality Guidelines.
[15] Bay Area Air Quality Management District (BAAQMD), 2012 (Revised). California Environmental Quality Act Air Quality Guidelines.
[16] Bay Area Air Quality Management District (BAAQMD), 2012 (Revised). California Environmental Quality Act Air Quality Guidelines.

- Non-compliance with a qualified Community Risk Reduction Plan; or
- An excess cancer risk levels of more than 100 in one million or a chronic non-cancer hazard index (from all local sources) greater than 10.0; or
- 0.8 µg/m^3 annual average $PM_{2.5}$. [17]

Construction Risk

The Threshold of Significance for construction-related local community risk and hazard impacts is the same as for Project operations. The BAAQMD has adopted screening tables for air toxics evaluation during construction. Construction-related TAC and PM impacts should be addressed on a case-by-case basis, taking into consideration the specific construction-related characteristics of each project and proximity to off-site receptors, as applicable. [18]

Greenhouse Gas Emissions

The BAAQMD's *CEQA Air Quality Guidelines* include methodology and thresholds GHG emissions.[19] The BAAQMD's Guidelines include screening criteria and significance criteria that would be applicable to the proposed Project. If a project exceeds the screening level, it would be required to conduct a full analysis using the BAAQMD's significance criteria. Pursuant to BAAQMD methodology, GHG emissions impacts represent the project's cumulative contribution to GHG emissions and its associated significant adverse impacts to global climate change. No single project could generate enough GHG emissions to noticeably change global average temperature.[20]

BAAQMD has a tiered approach for assessing GHG emissions impacts of a project. If the project is within the jurisdiction of an agency that has a "qualified" GHG reduction strategy, the project can assess consistency of its GHG emissions impacts with the reduction strategy outlined. The County of Alameda has prepared but has not yet adopted, with environmental review, its Community Climate Action Plan. Therefore, the plan is not yet considered a "qualified" GHG reduction strategy.

In the absence of an applicable qualified GHG reduction strategy, BAAQMD has adopted screening criteria and significance criteria for development projects that would be applicable for the proposed Project. If a project

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[17] Bay Area Air Quality Management District (BAAQMD), 2012 (Revised). California Environmental Quality Act Air Quality Guidelines.

[18] Bay Area Air Quality Management District (BAAQMD), 2012 (Revised). California Environmental Quality Act Air Quality Guidelines.

[19] On March 5, 2012, the Court issued a ruling in California Building Industry Association v. Bay Area Air Quality Management District (Superior Court Case No. RG10548693). Pursuant to the ruling, the Court found that the adoption of the BAAQMD's CEQA Guidelines is a "project" requiring CEQA review. No CEQA review was conducted for the CEQA Guidelines prior to their adoption. Therefore, the Court set aside adoption of the BAAQMD CEQA Guidelines for determining the significance of air quality and greenhouse gas emissions. The Court also ordered BAAQMD to take no further action to disseminate those standards before performing CEQA review related to issuing the standards. While adoption of the thresholds was set aside until an environmental evaluation is conducted, BAAQMD's GHG significance criteria, as outlined in their Draft CEQA Guidelines, are supported by extensive studies and analysis. Accordingly, pursuant to its discretion under CEQA Guidelines section 15064 (b), the City has decided to apply the BAAQMD CEQA thresholds to the proposed Project.

[20] BAAQMD defines Plan-Level thresholds for GHG emissions for General Plan projects only. All other projects, including CEQA program-level analysis, must use its Project-Level criteria.

exceeds the GHG screening-level sizes (in BAAQMD's CEQA Guidelines), the project would be required to conduct a full GHG analysis using the following BAAQMD's significance criteria:

- 1,100 MTons of carbon dioxide-equivalent (CO_2e) per year; or
- 4.6 MTons of CO_2e per service population [21]

Land use development projects include residential, commercial, industrial, and public land use facilities. Direct sources of emissions may include on-site combustion of energy such as natural gas used for heating and cooking, emissions from industrial processes (not applicable for most land use development projects), and fuel combustion from mobile sources. Indirect emissions are emissions produced off site from energy production, water conveyance due to a project's energy use and water consumption, and non-biogenic emissions from waste disposal. Biogenic CO_2 emissions are not included in the quantification of a project's GHG emissions, because biogenic CO_2 is derived from living biomass (e.g., organic matter present in wood, paper, vegetable oils, animal fat, food, animal, and yard waste) as opposed to fossil fuels.

BAAQMD does not have thresholds of significance for construction-related GHG emissions. BAAQMD requires quantification and disclosure of construction-related GHG emissions. However, GHG emissions from construction activities are short term and therefore not assumed to significantly contribute to cumulative GHG emissions impacts of the Project.[22]

AIR QUALITY IMPACT ANALYSIS

a) Conflict with or obstruct implementation of the applicable air quality plan?

Large projects that exceed regional employment, population, and housing planning projections have the potential to be inconsistent with the regional inventory compiled as part of BAAQMD's Clean Air Plan. The Project is not considered a regionally significant project that would significantly affect regional vehicle miles traveled and warrant Intergovernmental Review by the Metropolitan Transportation Commission (MTC) pursuant to the CEQA Guidelines (CEQA Guidelines Section 15206). In addition, the proposed Project would not exceed the level of population or housing foreseen in City or regional planning efforts (Population and Housing) and, therefore, would not have the potential to substantially affect housing, employment, and population projections within the region, which is the basis of the Clean Air Plan projections. Furthermore, the net increase in regional emissions generated by the proposed Project would be less than the BAAQMD's emissions thresholds (see b) below). These thresholds are established to identify projects that have the potential to generate a substantial amount of criteria air pollutants. Because the proposed Project would not exceed these thresholds, the proposed Project would not be considered by the BAAQMD to be a substantial emitter of criteria air pollutants. Therefore, the Project would not conflict with or obstruct implementation of the 2010 Bay Area Clean Air Plan and impacts would be considered *less than significant*.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

The following describes Project-related impacts from short-term construction activities and long-term operation of the Project.

[21] BAAQMD defines service population as residents and employees generated by the project.

[22] Bay Area Air Quality Management District (BAAQMD), 2012 (Revised). California Environmental Quality Act Air Quality Guidelines.

Construction-Period
Criteria air pollutants generated during construction activities would include the following sources:

- Exhaust emissions from powered construction equipment;
- Fugitive dust generated by demolition, earthmoving, excavation, and other construction activities; and
- Motor vehicle emissions associated with vehicle trips;

Air pollutant emissions from construction activities on site would vary daily as construction activity levels change and during different construction phases of the proposed Project. The BAAQMD's screening thresholds are not applicable for projects that have overlap of construction phases (e.g. parking lot demolition, grading, and re-paving, and building construction would occur simultaneously), construction of mixed-use projects, projects that require extensive site preparation, or sites that require extensive material transport. Therefore, a quantified analysis of the Project's construction emissions was conducted using California Emissions Estimator Model (CalEEMod), based on the construction equipment list and phasing provided by the applicant. Construction activities are anticipated to commence in 2013 and be completed in approximately 6 months. To determine potential construction-related air quality impacts, criteria air pollutants generated by Project-related construction activities are compared to the BAAQMD significance thresholds in Table 5 for average daily emissions. Average daily emissions are based on the maximum daily construction emissions for the Winter months for each sub-phase, multiplied by the work days of each sub-phase, summed, and divided by the total number of construction days.

Table 5
Average Daily Construction Emissions (in pounds per day)

POLLUTANT	ROG	NO_X	EXHAUST PM_{10}	EXHAUST $PM_{2.5}$
2013	8	23	1	1
BAAQMD Daily Threshold	54	54	82	54
Exceeds Threshold	No	No	No	No

Source: CalEEMod, Version 2011.1.1. Average daily emissions are based on the maximum daily construction emissions for the Winter months for each sub-phase, multiplied by the work days for each sub-phase, summed, and divided by the total number of construction days per year. Air quality modeling is based on the construction schedule and equipment list provided by the Project applicant.

As shown in Table 5, criteria air pollutant emissions from construction equipment exhaust would not exceed the BAAQMD daily thresholds. Fugitive dust emissions (PM_{10} and $PM_{2.5}$) are considered to be significant unless the proposed Project implements the BAAQMD's Basic Control Measures for fugitive dust control during construction. PM_{10} is typically the most significant source of air pollution from the dust generated from construction. The amount of dust generated during construction would be highly variable and is dependent on the size of the area disturbed at one time along with the amount of activity, the equipment being operated, soil conditions and meteorological conditions. If uncontrolled, PM_{10} and $PM_{2.5}$ levels downwind of actively disturbed areas could possibly exceed State standards. Consequently, construction-related criteria pollutant emissions are *significant*.

Mitigation Measure

AQ-1: The Project contractor shall prepare a dust control plan prior to commencement of construction activities. Specification of the approved dust control measures shall be included in all construction documents and implemented during construction activities. The dust control plan shall include the following BAAQMD Basic Control Measures listed below:

- Water all active construction areas at least twice daily, or as often as needed to control dust emissions. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible.

- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e. the minimum required space between the top of the load and the top of the trailer).

- Pave, apply water twice daily or as often as necessary, to control dust, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.

- Sweep daily (with water sweepers using reclaimed water if possible), or as often as needed, with water sweepers all paved access roads, parking areas and staging areas at the construction site to control dust.

- Sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the Project site, or as often as needed, to keep streets free of visible soil material.

- Hydroseed or apply non-toxic soil stabilizers to inactive construction areas.

- Enclose, cover, water twice daily or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.).

- Limit vehicle traffic speeds on unpaved roads to 15 mph.

- Replant vegetation in disturbed areas as quickly as possible.

- Install sandbags or other erosion control measures to prevent silt runoff from public roadways.

Significance after Mitigation: The implementation of this mitigation measure would require implementation of BAAQMD's Basic Control measure to reduce fugitive dust during construction activities and would reduce the impact to a less-than-significant level.

Operation-Period

Operation of the proposed Project would generate criteria air pollutants primarily from transportation sources (people driving to the retail store) and energy use. BAAQMD CEQA Guidelines identifies screening criteria for

operation-related criteria air pollutant emissions for a "Free-Standing Discount Store[23]" of 76,000 square feet. Since the Project is a 25,000 square feet retail store it is below the screening criteria for criteria air pollutant emissions. Projects that are below the screening threshold generate a *de minimus* amount of criteria air pollutant emissions. Therefore, impacts are *less than significant*.

c) 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)?

The SFBAAB is currently designated as a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS. Any project that does not exceed or can be mitigated to less than the BAAQMD significance levels, used as the threshold for determining major projects, does not add significantly to a cumulative impact. As explained in response to criteria b) above construction and operation of the Project would not result in regional emissions in excess of these threshold values. Consequently, the Project would not result in a cumulatively considerable contribution to O_3, $PM_{2.5}$, and PM_{10} concentrations in the SFBAAB. As a result, Project emissions would have a *less-than-significant impact* on cumulative emissions.

d) Expose sensitive receptors to substantial pollutant concentrations?

The Project may expose sensitive receptors to elevated pollutant concentrations if it causes or contributes significantly to elevated pollutant concentration levels. Localized concentrations refer to the amount of pollutant in a volume of air (ppm or $\mu g/m^3$) and can be correlated to potential health effects to sensitive populations. The closest sensitive receptors to the Project site are single- and multi-family residences abutting the site to the north (approximately 70 feet from Project boundary).

Construction Risk and Hazards

The proposed Project would elevate concentrations of TACs and diesel-$PM_{2.5}$ in the vicinity of sensitive land uses during construction activities. Sensitive land uses in the vicinity of the Project include single- and multi-family residences abutting the site to the north (approximately 70 feet from the Project boundary).

The BAAQMD has developed screening thresholds for assessing potential health risks from construction activities. Receptors would have to be located more than 100 meters (328 feet) away to fall below the BAAQMD's screening thresholds. Consequently, a full Health Risk Assessment (HRA) of DPM and $PM_{2.5}$ was conducted. Construction sources evaluated in the HRA include off-road construction equipment. Using air dispersion models, sensitive receptor concentrations were estimated and excess lifetime cancer risks and acute and chronic non-cancer hazard indexes were calculated. These risks were then compared to the significance thresholds identified in the BAAQMD CEQA Guidelines. The results are summarized in Table 6.

[23] A traffic study for the project used the "Shopping Center – ITE Code 820" to determine trip generation for the air quality impact. However, the project is a freestanding discount store within a larger shopping complex; and therefore, the screening criteria for a "Free-Standing Discount Store" was used.

Table 6
Construction Risk Summary

POLLUTANT	CANCER RISK - ADULT	CANCER RISK - CHILD	CHRONIC HAZARD	$PM_{2.5}$
2013	1.1E-06	13E-06	0.029	0.14 $\mu g/m^3$
BAAQMD Daily Threshold	10E-06	10E-06	1.0	0.3 $\mu g/m^3$
Exceeds Threshold	No	Yes	No	No

Source: Construction Health Risk Assessment, 2012.

Results of the health risk assessment indicate that the incremental cancer risk for sensitive receptors proximate to the site during the construction period, based on the maximum receptor concentration for a 70-year, 24-hour outdoor exposure duration for the child scenario is 13 x 10-6 (13 per million), which exceeds the significance threshold of 10 per million, and for the adult scenario is 1.1 x 10-6 (1.1 per million), which is less than the significance threshold of 10 per million. For non-carcinogenic effects, the hazard index identified for each toxicological endpoint totaled less than one. Therefore, acute and chronic non-carcinogenic hazards are within acceptable limits. In addition, $PM_{2.5}$ annual concentrations are below the BAAQMD significance thresholds. Community risk and hazards for the child scenario from construction activities would be *significant*.

Mitigation Measure

AQ-2: The construction contractor shall implement the following measures to reduce construction exhaust emissions during grading and construction activities:

- The construction contractor shall use construction equipment rated by the United States Environmental Protection Agency as having Tier 3 or higher exhaust emission limits for equipment over 90 horsepower. Tier 3 engines between 90 and 750 horsepower are available for 2006 to 2008 model years. A list of construction equipment by type and model year shall be maintained by the construction contractor onsite.

- The construction contractor shall ensure that all construction equipment is properly serviced and maintained to the manufacturer's standards to reduce operational emissions.

- The construction contractor shall limit nonessential idling of construction equipment to no more than five consecutive minutes.

Significance after Mitigation: The implementation of this mitigation measure would require use of Tier 3 construction equipment for offroad engines over 90 horsepower and would reduce the impact to a less-than-significant level, as shown in Table 7.

Table 7
Construction Risk Summary With Mitigation

POLLUTANT	CANCER RISK - ADULT	CANCER RISK - CHILD	CHRONIC HAZARD	$PM_{2.5}$
2013	8.6E-07	9.7E-06	0.022	0.11 $\mu g/m^3$
BAAQMD Daily Threshold	10E-06	10E-06	1.0	0.3 $\mu g/m^3$
Exceeds Threshold	No	No	No	No

Source: Construction Health Risk Assessment, 2012.Includes Mitigation Measure AQ-2.

Operational Risk and Hazards

The BAAQMD Guidelines recommend examining existing or future proposed sources of TACs and/or respirable particulate matter ($PM_{2.5}$) emissions that would adversely affect individuals within the Project or its surroundings. The nearest sensitive receptors to the site are single- and multi-family residences located to the north of the proposed Project site (approximately 70 feet from the Project boundary). The Project would involve minimal truck deliveries and would be far below the screening threshold identified by CARB's *Air Quality Land Use Compatibility Handbook* of 100 trucks per day. The proposed Project would not exceed operation-related thresholds for criteria air pollutants and would not adversely affect the residential area. The Project would not be a major source of toxic air pollutant emissions and would not affect offsite sensitive receptors. Impacts are *less than significant*.

CO Hotspots

Areas of vehicle congestion have the potential to create pockets of CO called hot spots. These pockets have the potential to exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2011). The proposed Project would generate an average of 1,074 daily vehicle trips during the weekday, 1,249 trips on Saturday, and 631 trips on Sunday. The traffic generated by the proposed Project would be nominal and would not exceed emission rates. In addition, the potential for CO hotspots to be generated in the SFBAAB is extremely unlikely because of the improvements in vehicle emission rates and control efficiencies. Typical projects would not expose sensitive receptors to substantial pollutant concentrations and analysis of CO hotspots is not warranted. Furthermore, the Project would not increase exposure at the Project site from proximity to the surrounding roadways. Therefore, impacts are *less than significant* and no mitigation measures are necessary.

e) Create objectionable odors affecting a substantial number of people?

The proposed Project would create a free-standing discount store in an existing commercial area. Retail uses are not considered a type of land use that has the potential to generate nuisance odors that could affect a substantial number of people. The type of facilities that are considered to have objectionable odors include wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. The proposed Project would

not generate objectionable odors that would lead to a public nuisance; therefore, operational impacts would be less than significant.

During construction activities, construction equipment exhaust would temporarily generate odors. Any construction-related odor emissions would be temporary, intermittent in nature, and would dissipate rapidly from the source with an increase in distance. Odors would not likely be objectionable and constitute a public nuisance. Impacts associated with construction-generated odors would be less than significant and no mitigation measures are necessary. Therefore, impacts are *less than significant*.

GREENHOUSE GAS EMISSIONS IMPACT ANALYSIS

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

A project does not generate enough GHG emissions on its own to influence global climate change; therefore, this impact analysis measures the Project's contribution to the cumulative environmental impact. GHG emissions would be generated from construction activities and operation of the proposed Project.

Construction-Period

Annual GHG emissions were calculated for construction of the proposed Project. Construction of the Project would generate a total of 169 MTons of GHG emissions over the entire construction period (approximately 6 months). Because construction emissions are short term and would cease upon completion, GHG from construction activities would nominally contribute to GHG emissions impacts. For this reason, BAAQMD does not identify a significance threshold for project-related construction emissions. Consequently, GHG emissions generated by Project-related construction activities are considered *less than significant*.

Operational Phase

Operation of the proposed Project would contribute to global climate change through direct emissions of GHG from transportation sources (people driving to the retail store), area sources (e.g., landscape equipment), water use, electricity use, and waste disposal. BAAQMD CEQA Guidelines identifies the screening criteria for operation-related GHG emissions for a "Free-Standing Discount Store" of 15,000 square feet. Since the Project is a 25,000 square feet retail store it is above the screening criteria set for GHG emissions. Further analysis of GHG emissions from the proposed Project was conducted and is shown in Table 8. Operation of the Project would generate 800 Mtons of GHG emissions. The threshold set by the BAAQMD CEQA Guidelines of 1,100 MTons would not be exceeded by the operation of the proposed Project; therefore, *less-than-significant* impacts would occur and no mitigation measures are necessary

Table 8
GHG Emissions Inventory

SECTOR	GHG EMISSIONS (MTONS/YEAR)
Area	0
Energy	72
Mobile	677
Waste	49
Water	3
Total	800
BAAQMD Threshold	1,100
Exceeds Threshold	No

Source: CalEEMod 2011.1.1. Based on 2020 emission rates.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

State and Regional GHG Reduction Plans

In accordance with AB 32, CARB developed the Scoping Plan to outline the State's strategy to achieve 1990 level emissions by year 2020. To estimate the reductions necessary, CARB projected statewide 2020 BAU GHG emissions (i.e., GHG emissions in the absence of statewide emission reduction measures). CARB identified that the State as a whole would be required to reduce GHG emissions by 28.5 percent from year 2020 BAU to achieve the targets of AB 32. The revised BAU 2020 forecast shows that the state would have to reduce GHG emissions by 21.6 percent from BAU without Pavley and the 33 percent RPS or 15.7 percent from the adjusted baseline (i.e., with Pavley and 33 percent RPS). MTC has not yet adopted a Sustainable Communities Strategy (SCS) to achieve the 7 percent per capita reduction from 2005 by 2020, and a 15 percent per capita reduction from 2005 by 2035.

Statewide strategies to reduce GHG emissions include the Low Carbon Fuel Standard, California Appliance Energy Efficiency regulations, California Building Standards (i.e. CALGreen and the 2008 Building and Energy Efficiency Standards), California Renewable Energy Portfolio standard (33 percent RPS), changes in the corporate average fuel economy standards (e.g., Pavley I and Pavley II), and other measures that would ensure the State is on target to achieve the GHG emissions reduction goals of AB 32. Statewide GHG emissions reduction measures that are being implemented over the next 10 years would reduce the Project's GHG emissions. The Project would be consistent with the existing regulations adopted for the purpose of reducing GHG emissions. The proposed landscaping and water fixtures would be constructed in conformance with the CALGreen and the County's Water Efficient Landscape Ordinance (WELO), which requires high-efficiency water fixtures for indoor plumbing and water efficient irrigation systems. Therefore, impacts would be *less than significant*.

Local GHG Reduction Plan

Castro Valley is an unincorporated community within Alameda County. The County has prepared a Community Climate Action Plan (CAP) in June 2011. However, Alameda County's Community CAP had not yet completed environmental review; and therefore, it is not a "qualified" climate action plan until environmental review has been completed and it has been adopted by the County. Nonetheless, this Plan is the County's current GHG emissions reduction strategy to achieve the GHG reduction targets of AB 32. A consistency analysis with the GHG reduction measures in the CAP is included in Table 9. As shown in this table, the Project would be generally consistent; however, several additional measures are necessary to ensure the project would implement the plan. Therefore, the impact would be *significant*.

Table 9
Alameda County Draft Community Climate Action Plan Consistency Evaluation

APPLICABLE MEASURES	EVALUATION
T-1. Improve bicycle infrastructure near community activity areas	The County of Alameda is currently implementing a "pedestrian main street" along the Castro Valley Boulevard. This street improvement project is intended as a traffic calming project that would provide shared bicycle access along Castro Valley Boulevard and improve the pedestrian street environment to encourage more residents to bike and walk. The existing Castro Village shopping center has existing bicycle parking onsite. To ensure that additional bicycle infrastructure is integrated into the proposed Project, Mitigation Measure AQ-3 would require placement of bicycle parking at the proposed retail store.
T-2. Develop appropriate bicycle infrastructure for high traffic intersections and corridors	This is a County-wide measure and is not applicable for the proposed Project.
T-3. Increase the number of bicycle racks and storage facilities in underserved civic and commercial areas.	The existing Castro Village shopping center has existing bicycle parking onsite. To ensure that additional bicycle infrastructure is integrated into the proposed Project, Mitigation Measure AQ-3 would require placement of bicycle parking at the proposed retail store.
T-4. Enhance pedestrian infrastructure within easy walking distance from community activity centers.	The Project would provide pedestrian connections from the proposed retail building to existing shopping complex. Furthermore, there is a pedestrian route connecting the transit stop to the Castro Village shopping center.
T-5. Expand the Traffic Calming Program to improve pedestrian safety.	This is a County-wide measure and is not applicable for the proposed Project.
T-6. Improve pedestrian connectivity and route choice in neighborhoods	The Project would provide pedestrian connections from the proposed retail building to existing shopping complex. Furthermore, there is a pedestrian route connecting the transit stop to the Castro Village shopping center.
T-7. Work with school districts to develop a School Alternative Transportation Plan by improving/expanding walking school bus, safe routes to school program, and school bus	This is a County-wide measure and is not applicable for the proposed Project.

Table 9
Alameda County Draft Community Climate Action Plan Consistency Evaluation

APPLICABLE MEASURES	EVALUATION
services	
T-8. Conduct a public transit study and implement ridership enhancement programs	This is a County-wide measure and is not applicable for the proposed Project.
T-9. Work with AC transit to increase service frequency on select bus routes	This is a County-wide measure and is not applicable for the proposed Project.
T-10. Provide transit buses with signal prioritization devices to facilitate time effective public transit service	This is a County-wide measure and is not applicable for the proposed Project.
T-11. Work with AC Transit to provide transit with essential improvements including shelters, route information, benches, and lighting.	The Alameda-Contra Costa Transit District (AC Transit) provides bus service within the Project vicinity. A bus stop is located near the intersection of Castro Valley Boulevard, west of Redwood Road, within walking distance of the Project is served by Route 32. A bus stop on Redwood Road, near the intersection of Castro Valley Boulevard, is also served by Route 48. There are existing pedestrian benches for transit users and a pedestrian route connecting the transit stop to the Castro Village shopping center.
T-12 Work with public transit agencies to better accommodate bicycles	This is a County-wide measure and is not applicable for the proposed Project.
T-13 Enhance rideshare infrastructure and services to increase community participation in this important travel mode	This is a County-wide measure and is not applicable for the proposed Project.
T-14 Reduce minimum parking requirements for mixed-use, pedestrian and transit-oriented development	This measure is not applicable to a retail project.
(L-1 – Eliminated)	Eliminated.
L-2 Facilitate the establishment of mixed-use, pedestrian-, and transit-oriented development near major transit stations or transit corridors	This measure is not applicable to a retail project.
L-3 Reduce restrictions on second units in single-family residential districts near transit stations, major bus route corridors, neighborhood commercial centers, and central business districts	This measure is not applicable to a retail project.
L-4 Increase the diversity of uses in neighborhood-serving commercial centers.	The Castro Village shopping center includes a mix of commercial land uses, including neighborhood-serving restaurant, retail shops, and recreation (bowling alley). The project would expand the Castro Village shopping center with additional retail uses.
L-5 Improve the vitality of mixed-use neighborhood-serving commercial centers through increased density allowances and enhanced design	The Castro Village shopping center includes a mix of commercial land uses, including neighborhood-serving restaurant, retail shops, and recreation (bowling alley). The project would expand the Castro Village shopping center with additional retail uses, which would

Table 9
Alameda County Draft Community Climate Action Plan Consistency Evaluation

APPLICABLE MEASURES	EVALUATION
	improve the economic vitality of this existing highly-utilized shopping center.
L-6 Conduct land use and market analyses to identify sites within expansive residential areas that could support new or expanded neighborhood commercial centers	This measure is not applicable to a retail project. However, the project would expand the existing commercial center in a predominately residential area of the County.
E-1 Work with PG&E and Alameda County cities to accelerate smart grid integration in the community	This is a County-wide measure and is not applicable for the proposed Project. PG&E is replacing analog meters in their service areas with new SmartMeters, which record electricity usage. The new commercial building would be fitted with the newer meter.
E-2 Evaluate the potential for district energy systems and develop an implementation plan	This is a County-wide measure and is not applicable for the proposed Project.
E-3 Develop a comprehensive outreach program to facilitate voluntary home energy efficiency improvements	This is a County-wide measure and is not applicable for the proposed Project.
E-4 Identify and develop financing programs that encourage energy efficiency and renewable energy	This is a County-wide measure and is not applicable for the proposed Project.
E-5 Expand outreach to low-income homeowners regarding energy efficiency and weatherization programs.	This is a County-wide measure and is not applicable for the proposed Project.
E-6 Identify and implement opportunities to improve efficiency of rental units	This is a County-wide measure and is not applicable for the proposed Project.
E-7 Develop and implement an outreach and financial assistance program that encourages businesses to invest in efficiency improvements	This is a County-wide measure and is not applicable for the proposed Project. Furthermore, the new building would be constructed to achieve the Building and Energy Efficiency Standards that are in effect at the time of construction.
E-8 Renew the County Green Building Ordinance	This is a County-wide measure and is not applicable for the proposed Project.
E-9 Provide incentives for buildings that exceed the California Title-24 standards for energy efficiency by 30 percent (Tier 2).	This is a County-wide measure and is not applicable for the proposed Project. At this time the Project is not proposed to exceed the current building energy standards. However, the County of Alameda has adopted a Green Building Program (Section 460, Chapter 15.08 of the County Code). The County' Green Building Code requires large non-residential projects (defined as 10,000 square feet or greater) to submit a Leadership and Energy Efficiency and Design (LEED) Project Checklist to the Building and Planning Department.
E-10 Require new construction to use building materials containing recycled content	According to this measure, the sum of post-consumer recycled content plus one-half of the post-industrial content should constitute at least 10 percent of the total value of the materials in the project. The measure allows for an exemption if the applicant proves that the requirement is unattainable for a specific project. In these cases, the

Table 9
Alameda County Draft Community Climate Action Plan Consistency Evaluation

APPLICABLE MEASURES	EVALUATION
	highest feasible level is required. Construction materials with recycled content are derived in two basic ways: ▪ Pre-consumer material: Material diverted from the waste stream during a manufacturing process. ▪ Post-consumer material: Material generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product, which can no longer be used for its intended purpose. CalRecycle maintains a comprehensive list of construction materials with recycled content, and their specifications. To ensure compliance with the measure, Mitigation Measure AQ-3 has been incorporated.
E-11 Require new commercial parking lots to incorporate heat gain-mitigating design strategies	The proposed Project landscape plan identifies several tall tree species (tall deciduous trees, evergreen trees, greater than 35 feet tall) and several medium accent trees and small accent trees to help shade the parking lot/buildings and reduce the heat-gain.
E-12 Require all new multi-unit buildings and major renovations to existing multi-unit buildings to be "sub-metered" in order to enable each individual unit to monitor energy and water consumption	This measure is not applicable to a retail project.
E-13 Establish Solar EmPowerment Districts that remove barriers to and facilitate the installation of solar photovoltaic systems.	This is a County-wide measure and is not applicable for the proposed Project
E-14 Facilitate the installation of solar hot water heating systems on large commercial buildings	The County does not require installation of solar hot water heating systems but encourages their use. Solar hot water heating systems reduce natural gas use but can increase energy use. The overall effect is a slight reduction in GHG emissions, if the solar hot water panels are efficient. The proposed project includes shade trees that would reduce the summer cooling costs, which would also reduce the effectiveness of any solar hot water heating panels. Installation of solar hot water systems may also preclude the installation of solar photovoltaic system. As an alternative, on-demand water heating systems may be more effective in reducing the GHG emissions and is considered in Mitigation Measure AQ-3.
E-15 Develop a comprehensive residential renewable energy program that provides outreach, financing, and other forms of assistance	This is a County-wide measure and is not applicable for the proposed Project
E-16 Develop a green jobs program for the unincorporated areas of Alameda County	This is a County-wide measure and is not applicable for the proposed Project
WT-1 Encourage residents and businesses to conserve water in existing buildings and landscapes	This measure applies to existing buildings and landscapes. The proposed Project would install a new landscape plan that complies with the County of Alameda's Water Efficient Landscape Ordinance.

Table 9
Alameda County Draft Community Climate Action Plan Consistency Evaluation

APPLICABLE MEASURES	EVALUATION
WT-2 Require new landscape projects to reduce outdoor potable water use by 40 percent	The County of Alameda's Water Efficient Landscape Ordinance (WELO) applies to the proposed Project because the Project involves in placement of 2,500 square feet or more of irrigated landscape (Section 15.08 of the Alameda County Ordinance). To achieve a reduction in outdoor water use in landscaping, the WELO require use of Bay-Friendly Landscapes which can result in a water savings of an average of 50 percent or more. The County's Ordinance requires implementation of nine Bay-Friendly landscape practices (on the Bay Friendly Landscapes Basics Checklist). ▪ Three inches of mulch on non-turf areas ▪ Amend the soil with compost prior to planting ▪ Reduce and recycle landscape construction waste ▪ Choose and locate plants to grow to natural size ▪ Do not plant invasive plant species ▪ Grow drought tolerant California native, Mediterranean or Climate-adapted plants ▪ Minimize the lawn to 25 percent of landscaped areas, with sports and multiple-use fields exempted ▪ Specify weather-based irrigation controllers ▪ No sprinkler and spray heads for areas less than 8 feet wide To ensure implementation of the County's WELO, the County requires that project applicants complete a Water Efficient Landscape Worksheet as part of the Landscape Documentation Package that would be approved by the County Planning Department.
WT-3 Adopt an ordinance that allows the installation and use of greywater (recycled) systems for subsurface irrigation.	This is a County-wide measure and is not applicable for the proposed Project.
WT-4 Work with EBMUD and Zone 7 to redesign the water bill format to encourage water conservation in residential and commercial users	This is a County-wide measure and is not applicable for the proposed Project.
WS-1 Increase solid waste reduction and diversion to 90 percent by 2030	This is a County-wide measure and is not applicable for the proposed Project.
WS-2 Strengthen the Construction and Demolition Debris Management Ordinance.	Under the California Green Building Standards Code (CALGreen), adopted 2010 (revised 2012), construction contractors are required to recycle, reuse, or salvage a minimum of 50 percent of construction and demolition debris. The County of Alameda Building Code includes additional construction and demolition debris requirements including divert or salvage: ▪ 75 percent of inert solids ▪ 50 percent of remaining construction and demolition waste ▪ Submit a Debris Management Plan (per Section 470.6) prior to issuance of a demolition or building permit.

Table 9
Alameda County Draft Community Climate Action Plan Consistency Evaluation

APPLICABLE MEASURES	EVALUATION
WS-3 Develop a food waste collection program and an ordinance that requires all household and commercial food wastes and food soiled paper to be placed in organics carts.	This is a County-wide measure and is not applicable for the proposed Project. Under Assembly Bill 341 (AB 341) all commercial businesses are required by law to include recycling. The project would include recycling onsite and would comply with this existing law and this measure.
WS-4 Work with StopWaste.Org, Alameda County cities, and other organizations to urge adoption of legislation that requires extended producer responsibility and improves the recyclability of products and packaging	This is a County-wide measure and is not applicable for the proposed Project.
G-1 Expand the urban forest (e.g., street trees and trees on private lots) in order to sequester carbon and reduce building energy consumption	The Project includes new tree plantings within the Project site. The landscape plan will detail the location of tree plantings, which will reduce the urban heat island effect on the proposed building.
G-2 Include carbon sequestration as an objective within County-led natural area restoration projects	This is a County-wide measure and is not applicable for the proposed Project and the project is not within a natural area.
G-3 Establish a local community garden program to increase local food security and provide local recreation amenities.	This is a County-wide measure and is not applicable for the proposed Project.
G-4 Work with local farmers and agricultural non-profits to develop urban-edge farming opportunities in the unincorporated county.	This is a County-wide measure and is not applicable for the proposed Project.
G-5 Work with local organizations to establish farmers' market sites in the unincorporated county	This is a County-wide measure and is not applicable for the proposed Project. The Castro Valley community currently has a farmer's market at the Castro Valley BART station.

Mitigation Measure

AQ-3: Prior to issuance of a grading permit, the following measures shall be incorporated into the Project and verified by the County of Alameda:

(1) The Project shall provide on-site bicycle parking at the new retail building. The site plan shall identify the location of bicycle parking onsite.

(2) The Project shall incorporate one of the following unless substantial evidence is submitted to the County of Alameda that the following measures are not feasible:

(a) incorporate of solar hot water heater(s); Or

(b) incorporate on-demand water heater(s)

The location of on-demand water heaters or solar hot water heaters shall be shown on architectural plans submitted to the County.

(3) The Project shall incorporate recycled building products such that the sum of post-consumer recycled content plus one-half of the post-industrial content constitutes at least 10 percent of the total value ($) of the materials in the project, unless substantial evidence is submitted to the County of Alameda that the following measure is not feasible. In this circumstance, the applicant shall provide identify the highest feasible level of recycled building products incorporated. CalRecycle maintains a comprehensive list of construction materials with recycled content, and their specifications.

Significance after Mitigation: With implementation of the additional features in Mitigation Measure AQ-3, the project would be generally consistent with the Community Climate Action Plan and impacts would be *less than significant*.

Attachment A Air Quality Modeling Assumptions and Background Data

Landuse Assumptions

Construction	Unit	Metric	Acres	Square Feet	Comment
Parking - Parking Lot	229	Spaces	2.06	0	Parking Lot
Retail - Free-Standing Discount Store	25	1000 SF	0.57	25,000	TJ Maxx
Total Acreage=			2.63		

Climate Zone 5

	2008	**2020**
PG&E Procurement status:	12.4%	33%
	lbs/Mwh	
CO2	641.35	490.53
CH4	0.029	0.029
N2O	0.011	0.011

Note: 2020 CO2 intensity based on PG&E's Current Renewable Procurement Status: http://www.cpuc.ca.gov/PUC/energy/Renewables/index.htm

Construction Phasing

PhaseName	PhaseType	PhaseStartDate	PhaseEndDate	NumDaysWeek	NumDays
Building Demolition	Demolition	4/1/2013	4/12/2013	5	10
Building Grading	Grading	4/13/2013	4/25/2013	5	9
Foundation, Trenching	Building Construction	4/26/2013	5/23/2013	5	20
Shell Construction	Building Construction	5/24/2013	7/18/2013	5	40
Roof Construction	Building Construction	7/19/2013	7/25/2013	5	5
Interior Construction	Building Construction	7/26/2013	9/19/2013	5	40
Parking Demolition	Demolition	4/26/2013	5/23/2013	5	20
Parking Grading	Grading	5/24/2013	7/4/2013	5	30
Paving	Paving	7/5/2013	7/16/2013	5	8
Architectural Coating	Architectural Coating	9/6/2013	9/19/2013	5	10
			Total Construction Days		124

Note: Paving and Architectural Coating phases assumed to overlap with the end of the Building Construction phase.

* Default CalEEMod number of days

Construction Trips

		From Client			For CalEEMod		
		Worker Trips	Vendor Trips	Haul Trips	Worker Trips	Vendor Trips	Haul Trips
	# Days	Trips	Trips	Trips	Trips/Day	Trips/Day	Trips
Building Demolition	10	30	3	24	6	1	48
Grading	9			30	13		60
Foundation, Trenching	20	248	19		25	2	
Shell Construction	40	495	38		25	2	
Roof Construction	5	62	5		25	2	
Interior Construction	40	495	38		25	2	
Parking Lot Demolition	20	138	17	20	14	2	40
Parking Lot Grading	30	207	26		14	2	
Paving	8	55	7		14	2	
Architectural Coating	10				2		

CalEEMod defaults

CalEEMod Building Construction Work Days	105	days
Total Worker Trips	1300	Trips
Total Vendor Trips	100	Trips

CalEEMod Parking Renovation Work Days	58	days
Total Worker Trips	400	Trips
Total Vendor Trips	50	Trips

CalEEMod Modifications to Construction Defaults - Load Factors

Load factors based on OFFROAD2011 In-Use Off-Road Equipment (Construction, Industrial, Ground Support and Oil Drilling) module. Where data is not yet available in OFFROAD2011, load factors are reduced by 33 percent in accordance with CARB recommendations (California Air Resources Board [CARB]. 2010, September. Workshops on Information Regarding the Off-Road, Truck and Bus, Drayage Truck Regulations).

Default Equipment Mix

Equipment Type ID	OFFROAD2011 Adjusted ARB Load Factors	CalEEMod Default Load Factors	Percent Change	OFFROAD2011 Adjusted ARB Horsepower	CalEEMod Default Horsepower	HP Used in CalEEMod Run
Aerial Lifts	**0.31**	**0.46**	-33%	63	34	**63**
Air Compressors	**0.20**	**0.48**	-58%	NA	78	**78**
Cement and Mortar Mixers	**NA**	**0.56**		NA	9	**9**
Concrete/Industrial Saws	**NA**	**0.73**		NA	81	**81**
Cranes	**0.29**	**0.43**	-33%	226	208	**226**
Excavators	**0.38**	**0.57**	-33%	163	157	**163**
Forklift (GSE)	**0.20**	**NA**		107	NA	**107**
Forklifts	**0.30**	**0.30**	0%	89	149	**149**
Generator Sets	**NA**	**0.74**		NA	84	**84**
Graders	**0.41**	**0.61**	-33%	175	162	**175**
Pavers	**0.42**	**0.62**	-33%	126	89	**126**
Paving Equipment	**0.36**	**0.53**	-33%	131	82	**131**
Rollers	**0.38**	**0.56**	-33%	81	84	**84**
Rough Terrain Forklifts	**0.40**	**0.60**	-33%	100	83	**100**
Scrapers	**0.48**	**0.72**	-33%	362	356	**362**
Tractors/Loaders/Backhoes	**0.37**	**0.55**	-33%	98	75	**98**

Source: SJVAPCD, OFFROAD2011, and CalEEMod

Equipment from Project Schedule

Worksheet - CalEEMOD Maximum Daily to Average Daily Construction Emissions

ONSITE EMISSIONS

ONSITE -WINTER RUN		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Type	No. Days	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
Building Demolition	10	1.64	11.4	8.64	0.01	0.15	0.82	0.97	0.00	0.82	0.82
Building Grading	9	4.21	33.2	19.5	0.04	0.16	1.78	1.94	0.00	1.78	1.78
Foundation, Trenching	20	1.46	9.61	7.43	0.01		0.81	0.81		0.81	0.81
Shell Construction	40	1.17	7.66	5.26	0.01		0.64	0.64		0.64	0.64
Roof Construction	5	0.61	5.82	1.72	0.01		0.20	0.20		0.20	0.20
Interior Construction	40	1.47	10.6	7.76	0.01		0.69	0.69		0.69	0.69
Parking Demolition	20	1.64	11.4	8.64	0.01	0.27	0.82	1.09	0.00	0.82	0.82
Parking Grading	30	4.21	33.2	19.5	0.04	0.00	1.78	1.78	0.00	1.78	1.78
Paving	8	2.96	15.7	10.1	0.02		1.16	1.16		1.16	1.16
Architectural Coating	10	58.2	1.64	1.08	0.00		0.15	0.15		0.15	0.15
2013 Annual (lbs)		957	2726	1787	3.07	8.34	175	184	0.00	175	175

Average Daily Construction Emissions (lbs/day)

ONSITE EMISSIONS	No. Days	ROG	NOx	CO	SO2	Fugitive PM10*	Exhaust PM10	PM10 Total	Fugitive PM2.5*	Exhaust PM2.5	PM2.5 Total
2013	124	7.71	22.0	14.4	0.02	0.07	1.41	1.48	0.00	1.41	1.41
Threshold		54	54	NA	NA	BCM	82	NA	BCM	54	NA

*Fugitive Dust Excluded from BAAQMD's daily thresholds. BAAQMD's Basic Control Measures (BCM) required.

OFFSITE EMISSIONS

OFFSITE -WINTER RUN		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Type	No. Days	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
Building Demolition	10	0.28	2.84	1.80	0.00	0.19	0.10	0.29	0.01	0.10	0.12
Building Grading	9	0.42	3.75	2.73	0.01	0.32	0.13	0.45	0.03	0.13	0.15
Foundation, Trenching	20	0.24	0.54	2.12	0.00	0.36	0.02	0.38	0.01	0.02	0.04
Shell Construction	40	0.24	0.54	2.12	0.00	0.36	0.02	0.38	0.01	0.02	0.04
Roof Construction	5	0.24	0.54	2.12	0.00	0.36	0.02	0.38	0.01	0.02	0.04
Interior Construction	40	0.24	0.54	2.12	0.00	0.36	0.02	0.38	0.01	0.02	0.04
Parking Demolition	20	0.24	1.54	1.79	0.00	0.25	0.06	0.31	0.02	0.06	0.06
Parking Grading	30	0.15	0.45	1.27	0.00	0.21	0.02	0.23	0.01	0.02	0.02
Paving	8	0.15	0.45	1.27	0.00	0.21	0.02	0.23	0.01	0.02	0.02
Architectural Coating	10	0.02	0.02	0.15	0.00	0.03	0.00	0.03	0.00	0.00	0.00
2013 Annual (lbs)		42.5	167	351	0.09	56.0	6.23	62.2	2.20	6.23	8.71

Average Daily Construction Emissions (lbs/day)

OFFSITE EMISSIONS	No. Days	ROG	NOx	CO	SO2	Fugitive PM10*	Exhaust PM10	PM10 Total	Fugitive PM2.5*	Exhaust PM2.5	PM2.5 Total
2013	124	0.34	1.35	2.83	0.00	0.45	0.05	0.50	0.02	0.05	0.07
Threshold		54	54	NA	NA	BCM	82	NA	BCM	54	NA

*Fugitive Dust Excluded from BAAQMD's daily thresholds. BAAQMD's Basic Control Measures (BCM) required.

Bug in CalEEmod calculates PM10 fugitive dust from haul as if all trucks occurred on 1 day (Summer and Winter only).

For reporting purposes Fugitive PM10 is corrected for hauling error (Summer and Winter only).

TOTAL PROJECT EMISSIONS

Onsite and Offsite Emissions

Average Daily Construction Emissions (lbs/day)

TOTAL EMISSIONS	No. Days	ROG	NOx	CO	SO2	Fugitive PM10*	Exhaust PM10	PM10 Total	Fugitive PM2.5*	Exhaust PM2.5	PM2.5 Total
2013	124	8.06	23.3	17.2	0.03	0.52	1.46	1.98	0.02	1.46	1.48
Threshold		54	54	NA	NA	BCM	82	NA	BCM	54	NA

*Fugitive Dust Excluded from BAAQMD's daily thresholds. BAAQMD's Basic Control Measures (BCM) required.

Worksheet - CalEEMOD Maximum Daily to Average Daily Construction Emissions

ONSITE EMISSIONS - MITIGATED (Tier 3 Engines for Equipment over 90 HP)

ONSITE -WINTER RUN		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Type	No. Days	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
Building Demolition	10	1.08	6.67	8.77	0.01	0.15	0.62	0.77	0.00	0.62	0.62
Building Grading	9	2.81	17.9	20.0	0.04	0.16	1.27	1.43	0.00	1.27	1.27
Foundation, Trenching	20	0.96	5.75	7.09	0.01		0.58	0.58		0.58	0.58
Shell Construction	40	0.84	5.65	5.09	0.01		0.46	0.46		0.46	0.46
Roof Construction	5	0.46	3.00	3.00	0.01		0.17	0.17		0.17	0.17
Interior Construction	40	1.19	7.91	8.31	0.01		0.65	0.65		0.65	0.65
Parking Demolition	20	1.08	6.67	8.77	0.01	0.27	0.62	0.89	0.00	0.62	0.62
Parking Grading	30	2.81	17.9	20.0	0.04	0.00	1.27	1.27	0.00	1.27	1.27
Paving	8	2.43	11.1	10.2	0.02		0.98	0.98		0.98	0.98
Architectural Coating	10	58.2	1.64	1.08	0.00		0.15	0.15		0.15	0.15
2013 Annual (lbs)		846	1677	1829	3.07	8.34	134	143	0.00	134	134

Average Daily Construction Emissions (lbs/day)

ONSITE EMISSIONS	No. Days	ROG	NOx	CO	SO2	Fugitive PM10*	Exhaust PM10	PM10 Total	Fugitive PM2.5*	Exhaust PM2.5	PM2.5 Total
2013	124	6.82	13.5	14.7	0.02	0.07	1.08	1.15	0.00	1.08	1.08
Threshold		54	54	NA	NA	BCM	82	NA	BCM	54	NA

*Fugitive Dust Excluded from BAAQMD's daily thresholds. BAAQMD's Basic Control Measures (BCM) required.

OFFSITE EMISSIONS - MITIGATED (Tier 3 Engines for Equipment over 90 HP)

OFFSITE -WINTER RUN		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Type	No. Days	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
Building Demolition	10	0.28	2.84	1.80	0.00	0.19	0.10	0.29	0.01	0.10	0.12
Building Grading	9	0.42	3.75	2.73	0.01	0.32	0.13	0.45	0.03	0.13	0.15
Foundation, Trenching	20	0.24	0.54	2.12	0.00	0.36	0.02	0.38	0.01	0.02	0.04
Shell Construction	40	0.24	0.54	2.12	0.00	0.36	0.02	0.38	0.01	0.02	0.04
Roof Construction	5	0.24	0.54	2.12	0.00	0.36	0.02	0.38	0.01	0.02	0.04
Interior Construction	40	0.24	0.54	2.12	0.00	0.36	0.02	0.38	0.01	0.02	0.04
Parking Demolition	20	0.24	1.54	1.79	0.00	0.25	0.06	0.31	0.02	0.06	0.06
Parking Grading	30	0.15	0.45	1.27	0.00	0.21	0.02	0.23	0.01	0.02	0.02
Paving	8	0.15	0.45	1.27	0.00	0.21	0.02	0.23	0.01	0.02	0.02
Architectural Coating	10	0.02	0.02	0.15	0.00	0.03	0.00	0.03	0.00	0.00	0.00
2013 Annual (lbs)		42.5	167	351	0.09	56.0	6.23	62.2	2.20	6.23	8.71

Average Daily Construction Emissions (lbs/day)

OFFSITE EMISSIONS	No. Days	ROG	NOx	CO	SO2	Fugitive PM10*	Exhaust PM10	PM10 Total	Fugitive PM2.5*	Exhaust PM2.5	PM2.5 Total
2013	124	0.34	1.35	2.83	0.00	0.45	0.05	0.50	0.02	0.05	0.07
Threshold		54	54	NA	NA	BCM	82	NA	BCM	54	NA

*Fugitive Dust Excluded from BAAQMD's daily thresholds. BAAQMD's Basic Control Measures (BCM) required.

Bug in CalEEmod calculates PM10 fugitive dust from haul as if all trucks occurred on 1 day (Summer and Winter only).

For reporting purposes Fugitive PM10 is corrected for hauling error (Summer and Winter only).

TOTAL PROJECT EMISSIONS - MITIGATED (Tier 3 Engines for Equipment over 90 HP)

Onsite and Offsite Emissions

Average Daily Construction Emissions (lbs/day)

TOTAL EMISSIONS	No. Days	ROG	NOx	CO	SO2	Fugitive PM10*	Exhaust PM10	PM10 Total	Fugitive PM2.5*	Exhaust PM2.5	PM2.5 Total
2013	124	7.16	14.9	17.6	0.03	0.52	1.13	1.65	0.02	1.13	1.15
Threshold		54	54	NA	NA	BCM	82	NA	BCM	54	NA

*Fugitive Dust Excluded from BAAQMD's daily thresholds. BAAQMD's Basic Control Measures (BCM) required.

Worksheet - CalEEMOD Maximum to Average Daily Construction Emissions

Overlapping Phases - Annual Emissions

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Year - Phase	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
2013 - unmitigated	0.50	1.44	1.07	0.00	0.04	0.09	0.13	0.00	0.09	0.09
2013 - mitigated	0.44	0.92	1.09	0.00	0.04	0.07	0.11	0.00	0.07	0.07

Trip Generation Calculation

		Trip Rate		
Proposed Buildout	**1000 SF[1]**	**Weekday[2]**	**Saturday[3]**	**Sunday[3]**
Shopping Center	25	42.94	49.97	25.24
Trips		1,074	1,249	631

Sources

1 Projet Description

2 Traffic Impact Analysis (Abrams Associates, 2012)

3 ITE Trip Generation Manual Code 820 (derived based on 200,000 square feet of retail)

CASTRO VILLAGE SHOPPING CENTER
BUILDING "P" RETAIL BUILDING
PARKING LOT RENOVATION

Response to Request for Information related to Health Risk Assessment:

Construction Duration:

- Estimate: Six (6) months

Construction Phasing:

Demolition

- Two weeks (not including Parking Lot demolition which will be phased)
- Equipment: Excavator / Loader / Backhoe / Truck & Trailer
- Trips (Rough estimate) Mobilization – 3 trips, Hauling – 24 trips, Workers – 30 trips

Building Construction

- Five (5) months
- Equipment: Excavators / Scrapers / Graders / Loaders / Backhoes / Dump Trucks / Concrete Trucks / Concrete Pump / Forward-Reach / Forklifts / Scissor Lifts / JLGs / Crane
- Trips (Rough estimate) Haul Trips – 30 trips, Vendor Trips – 100 trips, Workers – 1,300 trips

Parking Lot Renovation

- Three (3) months (Phased)
- Equipment: Excavators / Scrapers / Graders / Loaders / Backhoes / Dump Trucks / Concrete Trucks
- Trips (Rough estimate) Haul Trips – 20 trips, Vendor Trips – 50 trips, Workers – 400 trips

Demolition Volume:

- Wood & Mixed Debris – 10 Tons
- Masonry – 150 Tons
- Asphalt – 550 Tons
- Concrete – 50 Tons

Soil Import / Export:

- Export – 650 Cubic Yards (Bio-Swale excavation, foundation spoils, utility spoils)
- Import – 570 Cubic Yards (Bio-Swale import)

Steve Bush

From: Kyle Simpson
Sent: Wednesday, November 07, 2012 10:36 AM
To: Nicole Vermilion
Cc: Steve Bush
Subject: FW: Castro Village Expansion Project - Request for Information

Hi Nicole,

See the following email from the construction manager.

Thanks,

Kyle Simpson
Associate
THE PLANNING CENTER | DC&E
1625 Shattuck Avenue, Suite 300 | Berkeley CA 94709
510.848.3815 | 510.848.4315 (f)
ksimpson@planningcenter.com
www.planningcenter.com |www.dceplanning.com

From: John Reilly [mailto:johnr@midstateconstruction.com]
Sent: Wednesday, November 07, 2012 10:35 AM
To: Kyle Simpson
Cc: patd@midstateconstruction.com
Subject: RE: Castro Village Expansion Project - Request for Information

Kyle,

You're welcome. I am more than happy to work with you and provide you with as much information as I can in order for you to complete your modeling, however, you need to understand that all I have to work with at this time is a very preliminary set of Design Development drawings. The project has yet to bid, and I have no input from any subcontractors, who are the ones responsible for providing and operating the majority of the equipment.

Regarding you assumptions:

The crane would be used only for specific, short duration tasks, such as assisting with the roof structure or installing roof-top equipment. It would be a small crane, and at the most, it would be on the job for a maximum of five (5) days.

The backhoes and loaders would only be on the job for the foundation construction, and underground plumbing and electrical (4 weeks). The forward reach / JLG equipment would be used during the shell construction (8 weeks). The forklifts and scissor lifts would be used for the interior construction and finishes (8 weeks).

I hope this is helpful let me know if you have any questions.

Regards,

John Reilly
Senior Project Estimator
Johnr@midstateconstruction.com

MIDSTATE CONSTRUCTION
Building Relationships

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From: Kyle Simpson [mailto:ksimpson@planningcenter.com]
Sent: Wednesday, November 07, 2012 9:53 AM
To: John Reilly
Subject: RE: Castro Village Expansion Project - Request for Information

Hi John,

Thanks so much for providing the previous responses.

In working through the modeling, we understand that there would be 1-loader, 2-backhoes, 2-forward reach forklifts, 2-scissor lifts, 2-JLGs, and 1 crane. According to our model (OFFROAD2011), the highest horsepower equipment is the crane. We are assuming that all equipment would operate every day, for 8-hours/day, during the 4.5-month building period (98 days). However, it is more likely that the crane would not operate 8-hours per day (nor would other equipment be "on" for the entire 8-hours) and the crane would only be in use for a much shorter duration.

In order to refine the inputs to the model, can you provide the following information?

1) How long the crane would be onsite (e.g., 2 weeks)?
2) Can you provide additional refinement for how many hours per day the equipment (1-loader, 2-backhoes, 2-forward reach forklifts, 2-scissor lifts, 2-JLGs, and 1 crane) may be operational while onsite during this phase?

Thanks,

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From: John Reilly [mailto:johnr@midstateconstruction.com]
Sent: Wednesday, October 31, 2012 8:14 AM
To: Kyle Simpson
Subject: RE: Castro Village Expansion Project - Request for Information

Kyle,

My apologies for not getting back to you sooner, I have been out of the office working on a few projects. My responses to your questions are below in RED.

John Reilly
Senior Project Estimator
Johnr@midstateconstruction.com

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From: Kyle Simpson [mailto:ksimpson@planningcenter.com]
Sent: Tuesday, October 30, 2012 7:54 AM
To: johnr@midstateconstruction.com
Subject: RE: Castro Village Expansion Project - Request for Information

Hi John,

I am just checking to see if you have been able to look into the questions I included below. For scheduling purposes, if you are looking into these questions, can you let me know when you expect to send me the information?

Thanks,

Kyle Simpson
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From: Kyle Simpson
Sent: Thursday, October 25, 2012 11:03 AM
To: 'John Reilly'
Subject: RE: Castro Village Expansion Project - Request for Information

Hi John,

Thank you for providing the detailed construction information. However for our modeling purposes, we'll need some of the phases broken down even further. For instance, the provided "Building Construction" phase seems to include equipment and haul trips typical to a grading phase and construction phase. Additionally, the "Parking Lot Renovation" phase appears to also have a grading phase (based on equipment such as scrapers/graders/etc.). For the HRA we'll need to split up these phases. Below is a draft list of our assumptions to input into the model, based on the provided information. Can you provide answers to our questions regarding phase durations and no. of equipment used?

Building Demolition - duration 2 weeks, beginning April 2013
Equipment – 1 excavator, loader, and backhoe

Grading - prior to Building Construction - duration time? (2 weeks?) - Yes
Equipment – excavator (#?) (1), scraper (#?) (1), grader (#?) (1), loader (#?) (1), backhoe (#?) (1)

Building Construction - now 4.5 months (5 months minus 2 weeks) - OK
Equipment - loader (#?) (1), backhoe (#?) (2), 1 forward reach, forklifts (#?) (2), scissor lifts (#?) (2), JLGs, (#?) (2), 1 crane

The parking lot construction / renovation will need to be phased due to the fact that it serves the entire shopping center and we will need to make parking available to customers at all times. At this time, we cannot finalize the phasing but I would estimate that the parking lot work will take place in three to four phases. Each phase should take three to four weeks depending on the size of the impacted area and the location of the work. Therefore…

Parking Lot Demolition - duration time? (3 to 4 phases, 1 week per phase)

Equipment – 1 excavator, (1) loader, and (1) backhoe per phase

Parking Lot Grading - duration time? (3 to 4 phases, 1 to 2 weeks per phase)
Equipment – excavator (#?) (1), scraper (#?) (1), grader (#?) (1), loader (#?) (1), backhoe (#?) (1)

Parking Lot Paving - duration time? (3 to 4 phases, 1 to 3 days per phase)
Equipment Assumptions – 1 paver, 2 rollers, 1 loader

I hope this helps, let me know if you have any other questions.

We'll set up the model so the construction is completed in 6 months' time, ending on 9/30/2013.

Thanks,

Kyle Simpson
Associate
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ksimpson@planningcenter.com
www.planningcenter.com | www.dceplanning.com

From: John Reilly [mailto:johnr@midstateconstruction.com]
Sent: Wednesday, October 24, 2012 1:09 PM
To: Kyle Simpson
Subject: RE: Castro Village Expansion Project - Request for Information

Kyle,

You're welcome. You'll have to check with Randy or Ron for the construction start date.

Regards,

John Reilly
Senior Project Estimator
Johnr@midstateconstruction.com

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From: Kyle Simpson [mailto:ksimpson@planningcenter.com]
Sent: Wednesday, October 24, 2012 1:04 PM
To: John Reilly
Subject: RE: Castro Village Expansion Project - Request for Information

Hi John,

Thanks for sending. It's very helpful.

When do you anticipate the start of construction occurring?

Thanks,

Kyle Simpson
Associate
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From: John Reilly [mailto:johnr@midstateconstruction.com]
Sent: Wednesday, October 24, 2012 12:08 PM
To: 'Randy Nahas'
Cc: 'Ron Nahas'; Kyle Simpson; patd@midstateconstruction.com
Subject: RE: Castro Village Expansion Project - Request for Information

Randy and Ron:

Attached is the information you requested for your consultant. Call or email with any questions.

Regards,

John Reilly
Senior Project Estimator
Johnr@midstateconstruction.com

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From: Pat Draeger [mailto:patd@midstateconstruction.com]
Sent: Monday, October 22, 2012 4:53 PM
To: 'Randy Nahas'
Cc: 'Ron Nahas'; johnr@midstateconstruction.com
Subject: RE: Castro Village Expansion Project - Request for Information

Randy,

John Reilly will respond with the needed information.

Pat Draeger
Vice President, Estimating
Patd@midstateconstruction.com

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Building Relationships

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(707) 762-0700 Fax
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From: Randy Nahas [mailto:renahas@nahasco.com]
Sent: Monday, October 22, 2012 4:46 PM

To: Pat Draeger
Cc: Ron Nahas
Subject: Fw: Castro Village Expansion Project - Request for Information

Pat,
I hate to keep bugging you, but can you answer any of these questions that our CEQA consultant has?
If it takes longer then Wednesday go ahead and e-mail Ron at RNahas@rafnah.com as I will be out of town
Thanks for your help Pat
Randy
----- Original Message -----
From: Kyle Simpson
To: renahas@nahasco.com
Sent: Wednesday, October 17, 2012 4:02 PM
Subject: Castro Village Expansion Project - Request for Information

Hi Randy,

In order to prepare a Health Risk Assessment, our air quality team needs some construction information listed below. The more information that you can provide, the more refined and accurate the assessment will be. Otherwise, reliance on default assumptions could overestimate the project's potential impact.

- Construction duration
- Construction phasing
  - Duration of each construction sub-phase
  - Preliminary equipment list for each construction sub-phase
  - Haul trips, vendor trips, and worker trips anticipated per sub-phase
- Demolition volumes, if necessary
- Soil import/export quantities, if necessary

If you have any questions, please don't hesitate to contact me.

Kyle Simpson
Associate
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Attachment B CalEEMod – Operational Phase

Castro Village Shopping Center - Operation

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Free-Standing Discount Store	25	1000sqft
Parking Lot	229	Space

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Pacific Gas & Electric Company
Climate Zone	5		2.2		
		Precipitation Freq (Days)			
			63		

1.3 User Entered Comments

Project Characteristics - 2020 CO2 intensity based on PG&E's Current Renewable Procurement Status

Land Use - Based on project description

Construction Phase - Operation phase only

Off-road Equipment - Operational phase only

Vehicle Trips - Based on Traffic Impact Analysis and ITE Trip Generation Manual Code 820

Energy Use - PG&E

Water And Wastewater - Wastewater is connected to sanitary sewer system.

Water 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	0.13	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	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	70.98	70.98	0.00	0.00	71.55
Mobile	0.51	1.27	4.10	0.01	0.78	0.04	0.82	0.01	0.04	0.05	0.00	676.14	676.14	0.03	0.00	676.68
Waste						0.00	0.00		0.00	0.00	21.83	0.00	21.83	1.29	0.00	48.91
Water						0.00	0.00		0.00	0.00	0.00	3.11	3.11	0.00	0.00	3.57
Total	**0.64**	**1.28**	**4.10**	**0.01**	**0.78**	**0.04**	**0.82**	**0.01**	**0.04**	**0.05**	**21.83**	**750.23**	**772.06**	**1.32**	**0.00**	**800.71**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.13	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	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	70.98	70.98	0.00	0.00	71.55
Mobile	0.51	1.27	4.10	0.01	0.78	0.04	0.82	0.01	0.04	0.05	0.00	676.14	676.14	0.03	0.00	676.68
Waste						0.00	0.00		0.00	0.00	21.83	0.00	21.83	1.29	0.00	48.91
Water						0.00	0.00		0.00	0.00	0.00	2.77	2.77	0.00	0.00	3.15
Total	**0.64**	**1.28**	**4.10**	**0.01**	**0.78**	**0.04**	**0.82**	**0.01**	**0.04**	**0.05**	**21.83**	**749.89**	**771.72**	**1.32**	**0.00**	**800.29**

Castro Village Shopping Center - Operation
Alameda County, Annual

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	0.51	1.27	4.10	0.01	0.78	0.04	0.82	0.01	0.04	0.05	0.00	676.14	676.14	0.03	0.00	676.68
Unmitigated	0.51	1.27	4.10	0.01	0.78	0.04	0.82	0.01	0.04	0.05	0.00	676.14	676.14	0.03	0.00	676.68
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
Free-Standing Discount Store	1,073.50	1,249.25	631.00	1,614,448	1,614,448
Parking Lot	0.00	0.00	0.00		
Total	1,073.50	1,249.25	631.00	1,614,448	1,614,448

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
Free-Standing Discount Store	9.50	7.30	7.30	12.20	68.80	19.00
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00

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	64.58	64.58	0.00	0.00	65.11
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	64.58	64.58	0.00	0.00	65.11
NaturalGas Mitigated	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	6.40	6.40	0.00	0.00	6.44
NaturalGas Unmitigated	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	6.40	6.40	0.00	0.00	6.44
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					
Free-Standing Discount Store	120000	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	6.40	6.40	0.00	0.00	6.44
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
Total		**0.00**	**0.01**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**6.40**	**6.40**	**0.00**	**0.00**	**6.44**

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					
Free-Standing Discount Store	120000	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	6.40	6.40	0.00	0.00	6.44
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
Total		**0.00**	**0.01**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**6.40**	**6.40**	**0.00**	**0.00**	**6.44**

Castro Village Shopping Center - Operation
Alameda County, Annual

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			
Free-Standing Discount Store	290250					64.58	0.00	0.00	65.11
Parking Lot	0					0.00	0.00	0.00	0.00
Total						**64.58**	**0.00**	**0.00**	**65.11**

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Free-Standing Discount Store	290250					64.58	0.00	0.00	65.11
Parking Lot	0					0.00	0.00	0.00	0.00
Total						**64.58**	**0.00**	**0.00**	**65.11**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.13	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	0.13	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	0.03					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.10					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	**0.13**	**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	0.03					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.10					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	**0.13**	**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**

Castro Village Shopping Center - Operation
Alameda County, Annual

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet
Install Low Flow Kitchen Faucet
Install Low Flow Toilet
Use Water Efficient Landscaping

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					2.77	0.00	0.00	3.15
Unmitigated					3.11	0.00	0.00	3.57
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			
Free-Standing Discount Store	1.85181 / 1.13498					3.11	0.00	0.00	3.57
Parking Lot	0 / 0					0.00	0.00	0.00	0.00
Total						**3.11**	**0.00**	**0.00**	**3.57**

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Free-Standing Discount Store	1.56293 / 1.13498					2.77	0.00	0.00	3.15
Parking Lot	0 / 0					0.00	0.00	0.00	0.00
Total						**2.77**	**0.00**	**0.00**	**3.15**

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					21.83	1.29	0.00	48.91
Unmitigated					21.83	1.29	0.00	48.91
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			
Free-Standing Discount Store	107.52					21.83	1.29	0.00	48.91
Parking Lot	0					0.00	0.00	0.00	0.00
Total						**21.83**	**1.29**	**0.00**	**48.91**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Free-Standing Discount Store	107.52					21.83	1.29	0.00	48.91
Parking Lot	0					0.00	0.00	0.00	0.00
Total						**21.83**	**1.29**	**0.00**	**48.91**

9.0 Vegetation

Castro Village Shopping Center - Operation

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Free-Standing Discount Store	25	1000sqft
Parking Lot	229	Space

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Pacific Gas & Electric Company
Climate Zone	5		2.2		
		Precipitation Freq (Days)			
			63		

1.3 User Entered Comments

Project Characteristics - 2020 CO2 intensity based on PG&E's Current Renewable Procurement Status

Land Use - Based on project description

Construction Phase - Operation phase only

Off-road Equipment - Operational phase only

Vehicle Trips - Based on Traffic Impact Analysis and ITE Trip Generation Manual Code 820

Energy Use - PG&E

Water And Wastewater - Wastewater is connected to sanitary sewer system.

Water 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	lb/day										lb/day					
Area	0.69	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		38.68		0.00	0.00	38.91
Mobile	3.70	8.47	26.02	0.06	6.45	0.29	6.74	0.09	0.27	0.36		5,335.99		0.20		5,340.30
Total	**4.39**	**8.50**	**26.05**	**0.06**	**6.45**	**0.29**	**6.74**	**0.09**	**0.27**	**0.36**		**5,374.67**		**0.20**	**0.00**	**5,379.21**

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	lb/day										lb/day					
Area	0.69	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		38.68		0.00	0.00	38.91
Mobile	3.70	8.47	26.02	0.06	6.45	0.29	6.74	0.09	0.27	0.36		5,335.99		0.20		5,340.30
Total	**4.39**	**8.50**	**26.05**	**0.06**	**6.45**	**0.29**	**6.74**	**0.09**	**0.27**	**0.36**		**5,374.67**		**0.20**	**0.00**	**5,379.21**

Castro Village Shopping Center - Operation
Alameda County, Summer

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	lb/day										lb/day					
Mitigated	3.70	8.47	26.02	0.06	6.45	0.29	6.74	0.09	0.27	0.36		5,335.99		0.20		5,340.30
Unmitigated	3.70	8.47	26.02	0.06	6.45	0.29	6.74	0.09	0.27	0.36		5,335.99		0.20		5,340.30
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
Free-Standing Discount Store	1,073.50	1,249.25	631.00	1,614,448	1,614,448
Parking Lot	0.00	0.00	0.00		
Total	1,073.50	1,249.25	631.00	1,614,448	1,614,448

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
Free-Standing Discount Store	9.50	7.30	7.30	12.20	68.80	19.00
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00

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	lb/day										lb/day					
NaturalGas Mitigated	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00		38.68		0.00	0.00	38.91
NaturalGas Unmitigated	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00		38.68		0.00	0.00	38.91
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	lb/day										lb/day					
Free-Standing Discount Store	328.767	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00		38.68		0.00	0.00	38.91
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
Total		**0.00**	**0.03**	**0.03**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**38.68**		**0.00**	**0.00**	**38.91**

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	lb/day										lb/day					
Free-Standing Discount Store	0.328767	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00		38.68		0.00	0.00	38.91
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
Total		**0.00**	**0.03**	**0.03**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**38.68**		**0.00**	**0.00**	**38.91**

Castro Village Shopping Center - Operation
Alameda County, Summer

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	lb/day										lb/day					
Mitigated	0.69	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	0.69	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	lb/day										lb/day					
Architectural Coating	0.16					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.53					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
Total	**0.69**	**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	lb/day										lb/day					
Architectural Coating	0.16					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.53					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
Total	**0.69**	**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

Install Low Flow Bathroom Faucet
Install Low Flow Kitchen Faucet
Install Low Flow Toilet
Use Water Efficient Landscaping

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Castro Village Shopping Center - Operation

Alameda County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Free-Standing Discount Store	25	1000sqft
Parking Lot	229	Space

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Pacific Gas & Electric Company
Climate Zone	5		2.2		
		Precipitation Freq (Days)			
			63		

1.3 User Entered Comments

Project Characteristics - 2020 CO2 intensity based on PG&E's Current Renewable Procurement Status

Land Use - Based on project description

Construction Phase - Operation phase only

Off-road Equipment - Operational phase only

Vehicle Trips - Based on Traffic Impact Analysis and ITE Trip Generation Manual Code 820

Energy Use - PG&E

Water And Wastewater - Wastewater is connected to sanitary sewer system.

Water 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	lb/day										lb/day					
Area	0.69	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		38.68		0.00	0.00	38.91
Mobile	3.67	8.53	28.17	0.06	6.45	0.30	6.75	0.09	0.27	0.37		4,888.15		0.19		4,892.17
Total	**4.36**	**8.56**	**28.20**	**0.06**	**6.45**	**0.30**	**6.75**	**0.09**	**0.27**	**0.37**		**4,926.83**		**0.19**	**0.00**	**4,931.08**

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	lb/day										lb/day					
Area	0.69	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		38.68		0.00	0.00	38.91
Mobile	3.67	8.53	28.17	0.06	6.45	0.30	6.75	0.09	0.27	0.37		4,888.15		0.19		4,892.17
Total	**4.36**	**8.56**	**28.20**	**0.06**	**6.45**	**0.30**	**6.75**	**0.09**	**0.27**	**0.37**		**4,926.83**		**0.19**	**0.00**	**4,931.08**

Castro Village Shopping Center - Operation
Alameda County, Winter

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	lb/day										lb/day					
Mitigated	3.67	8.53	28.17	0.06	6.45	0.30	6.75	0.09	0.27	0.37		4,888.15		0.19		4,892.17
Unmitigated	3.67	8.53	28.17	0.06	6.45	0.30	6.75	0.09	0.27	0.37		4,888.15		0.19		4,892.17
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
Free-Standing Discount Store	1,073.50	1,249.25	631.00	1,614,448	1,614,448
Parking Lot	0.00	0.00	0.00		
Total	1,073.50	1,249.25	631.00	1,614,448	1,614,448

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
Free-Standing Discount Store	9.50	7.30	7.30	12.20	68.80	19.00
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00

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	lb/day										lb/day					
NaturalGas Mitigated	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00		38.68		0.00	0.00	38.91
NaturalGas Unmitigated	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00		38.68		0.00	0.00	38.91
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	lb/day										lb/day					
Free-Standing Discount Store	328.767	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00		38.68		0.00	0.00	38.91
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
Total		**0.00**	**0.03**	**0.03**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**38.68**		**0.00**	**0.00**	**38.91**

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	lb/day										lb/day					
Free-Standing Discount Store	0.328767	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00		38.68		0.00	0.00	38.91
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
Total		**0.00**	**0.03**	**0.03**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**38.68**		**0.00**	**0.00**	**38.91**

Castro Village Shopping Center - Operation
Alameda County, Winter

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	lb/day										lb/day					
Mitigated	0.69	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	0.69	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	lb/day										lb/day					
Architectural Coating	0.16					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.53					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
Total	**0.69**	**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	lb/day										lb/day					
Architectural Coating	0.16					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.53					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
Total	**0.69**	**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

Install Low Flow Bathroom Faucet
Install Low Flow Kitchen Faucet
Install Low Flow Toilet
Use Water Efficient Landscaping

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Attachment C CalEEMod – Construction Phase

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Parking Lot	229	Space
Free-Standing Discount Store	25	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Pacific Gas & Electric Company
Climate Zone	5		2.2		
		Precipitation Freq (Days)			
			63		

1.3 User Entered Comments

Project Characteristics -

Land Use - Based on project description

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					
2013	0.5	1.44	1.07	0	0.05	0.09	0.14	0	0.09	0.09	0	168.78	168.78	0.02	0	169.13
Total	0.5	1.44	1.07	0	0.05	0.09	0.14	0	0.09	0.09	0	168.78	168.78	0.02	0	169.13

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					
2013	0.44	0.92	1.09	0	0.04	0.07	0.11	0	0.07	0.07	0	168.78	168.78	0.02	0	169.13
Total	0.44	0.92	1.09	0	0.04	0.07	0.11	0	0.07	0.07	0	168.78	168.78	0.02	0	169.13

Castro Village Shopping Center
Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Parking Lot	229	Space
Free-Standing Discount Store	25	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Pacific Gas & Electric Company
Climate Zone	5		2.2		
		Precipitation Freq (Days)			
			63		

1.3 User Entered Comments

Project Characteristics -

Land Use - Based on project description

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2013	59.86	41.77	28.24	0.05	2.2	2.46	3.9	0.03	2.46	2.48	0	5181.77	0	0.51	0	5192.56
Total	59.86	41.77	28.24	0.05	2.2	2.46	3.9	0.03	2.46	2.48	0	5181.77	0	0.51	0	5192.56

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	lb/day										lb/day					
2013	59.59	24.53	28.64	0.05	1.69	1.77	3.02	0.03	1.77	1.79	0	5181.77	0	0.51	0	5192.56
Total	59.59	24.53	28.64	0.05	1.69	1.77	3.02	0.03	1.77	1.79	0	5181.77	0	0.51	0	5192.56

3.0 Construction Detail

3.2 Building Demolition - 2013

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	lb/day										lb/day					
Fugitive Dust					0.34	0	0.34	0	0	0						0
Off-Road	1.64	11.35	8.64	0.01		0.82	0.82		0.82	0.82		1346.47		0.15		1349.55
Total	1.64	11.35	8.64	0.01	0.34	0.82	1.16	0	0.82	0.82		1346.47		0.15		1349.55

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	lb/day										lb/day					
Hauling	0.21	2.62	1.09	0	1.13	0.09	1.22	0.01	0.09	0.1		397.96		0.01		398.18
Vendor	0.01	0.17	0.08	0	0.01	0	0.01	0	0	0.01		27.38		0		27.4
Worker	0.05	0.05	0.49	0	0.09	0	0.09	0	0	0.01		73.16		0		73.26
Total	0.27	2.84	1.66	0	1.23	0.09	1.32	0.01	0.09	0.12		498.5		0.01		498.84

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	lb/day										lb/day					
Fugitive Dust					0.15	0	0.15	0	0	0						0
Off-Road	1.08	6.67	8.77	0.01		0.62	0.62		0.62	0.62	0	1346.47		0.15		1349.55
Total	1.08	6.67	8.77	0.01	0.15	0.62	0.77	0	0.62	0.62	0	1346.47		0.15		1349.55

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	lb/day										lb/day					
Hauling	0.21	2.62	1.09	0	1.03	0.09	1.12	0.01	0.09	0.1		397.96		0.01		398.18
Vendor	0.01	0.17	0.08	0	0.01	0	0.01	0	0	0.01		27.38		0		27.4
Worker	0.05	0.05	0.49	0	0.08	0	0.08	0	0	0.01		73.16		0		73.26
Total	0.27	2.84	1.66	0	1.12	0.09	1.21	0.01	0.09	0.12		498.5		0.01		498.84

3.3 Building Grading - 2013

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	lb/day										lb/day					
Fugitive Dust					0.37	0	0.37	0	0	0						0
Off-Road	4.21	33.15	19.45	0.04		1.78	1.78		1.78	1.78		3804.98		0.38		3812.87
Total	4.21	33.15	19.45	0.04	0.37	1.78	2.15	0	1.78	1.78		3804.98		0.38		3812.87

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	lb/day										lb/day					
Hauling	0.3	3.64	1.52	0.01	1.41	0.12	1.54	0.02	0.12	0.14		552.73		0.01		553.03
Vendor	0	0	0	0	0	0	0	0	0	0		0		0		0
Worker	0.1	0.1	1.07	0	0.19	0.01	0.2	0.01	0.01	0.01		158.52		0.01		158.73
Total	0.4	3.74	2.59	0.01	1.6	0.13	1.74	0.03	0.13	0.15		711.25		0.02		711.76

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	lb/day										lb/day					
Fugitive Dust					0.16	0	0.16	0	0	0						0
Off-Road	2.81	17.92	20.01	0.04		1.27	1.27		1.27	1.27	0	3804.98		0.38		3812.87
Total	2.81	17.92	20.01	0.04	0.16	1.27	1.43	0	1.27	1.27	0	3804.98		0.38		3812.87

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	lb/day										lb/day					
Hauling	0.3	3.64	1.52	0.01	1.29	0.12	1.41	0.02	0.12	0.14		552.73		0.01		553.03
Vendor	0	0	0	0	0	0	0	0	0	0		0		0		0
Worker	0.1	0.1	1.07	0	0.18	0.01	0.18	0.01	0.01	0.01		158.52		0.01		158.73
Total	0.4	3.74	2.59	0.01	1.47	0.13	1.59	0.03	0.13	0.15		711.25		0.02		711.76

3.4 Parking Demolition - 2013

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	lb/day										lb/day					
Fugitive Dust					0.64	0	0.64	0	0	0						0
Off-Road	1.64	11.35	8.64	0.01		0.82	0.82		0.82	0.82		1346.47		0.15		1349.55
Total	1.64	11.35	8.64	0.01	0.64	0.82	1.46	0	0.82	0.82		1346.47		0.15		1349.55

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	lb/day										lb/day					
Hauling	0.09	1.09	0.46	0	0.94	0.04	0.97	0.01	0.04	0.04		165.82		0		165.91
Vendor	0.03	0.33	0.17	0	0.02	0.01	0.03	0	0.01	0.01		54.77		0		54.8
Worker	0.11	0.11	1.15	0	0.21	0.01	0.22	0.01	0.01	0.01		170.71		0.01		170.94
Total	0.23	1.53	1.78	0	1.17	0.06	1.22	0.02	0.06	0.06		391.3		0.01		391.65

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	lb/day										lb/day					
Fugitive Dust					0.27	0	0.27	0	0	0						0
Off-Road	1.08	6.67	8.77	0.01		0.62	0.62		0.62	0.62	0	1346.47		0.15		1349.55
Total	1.08	6.67	8.77	0.01	0.27	0.62	0.89	0	0.62	0.62	0	1346.47		0.15		1349.55

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	lb/day										lb/day					
Hauling	0.09	1.09	0.46	0	0.85	0.04	0.89	0.01	0.04	0.04		165.82		0		165.91
Vendor	0.03	0.33	0.17	0	0.02	0.01	0.03	0	0.01	0.01		54.77		0		54.8
Worker	0.11	0.11	1.15	0	0.19	0.01	0.2	0.01	0.01	0.01		170.71		0.01		170.94
Total	0.23	1.53	1.78	0	1.06	0.06	1.12	0.02	0.06	0.06		391.3		0.01		391.65

3.5 Foundation, Trenching - 2013

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	lb/day										lb/day					
Off-Road	1.46	9.61	7.43	0.01		0.81	0.81		0.81	0.81		1089.31		0.13		1092.05
Total	1.46	9.61	7.43	0.01		0.81	0.81		0.81	0.81		1089.31		0.13		1092.05

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.17	0	0.02	0.01	0.03	0	0.01	0.01		54.77		0		54.8
Worker	0.2	0.19	2.05	0	0.37	0.01	0.39	0.01	0.01	0.03		304.84		0.02		305.25
Total	0.23	0.52	2.22	0	0.39	0.02	0.42	0.01	0.02	0.04		359.61		0.02		360.05

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	lb/day										lb/day					
Off-Road	0.96	5.75	7.09	0.01		0.58	0.58		0.58	0.58	0	1089.31		0.13		1092.05
Total	0.96	5.75	7.09	0.01		0.58	0.58		0.58	0.58	0	1089.31		0.13		1092.05

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.17	0	0.02	0.01	0.03	0	0.01	0.01		54.77		0		54.8
Worker	0.2	0.19	2.05	0	0.34	0.01	0.35	0.01	0.01	0.03		304.84		0.02		305.25
Total	0.23	0.52	2.22	0	0.36	0.02	0.38	0.01	0.02	0.04		359.61		0.02		360.05

3.6 Parking Grading - 2013

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	lb/day										lb/day					
Fugitive Dust					0	0	0	0	0	0						0
Off-Road	4.21	33.15	19.45	0.04		1.78	1.78		1.78	1.78		3804.98		0.38		3812.87
Total	4.21	33.15	19.45	0.04	0	1.78	1.78	0	1.78	1.78		3804.98		0.38		3812.87

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.17	0	0.02	0.01	0.03	0	0.01	0.01		54.77		0		54.8
Worker	0.11	0.11	1.15	0	0.21	0.01	0.22	0.01	0.01	0.01		170.71		0.01		170.94
Total	0.14	0.44	1.32	0	0.23	0.02	0.25	0.01	0.02	0.02		225.48		0.01		225.74

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	lb/day										lb/day					
Fugitive Dust					0	0	0	0	0	0						0
Off-Road	2.81	17.92	20.01	0.04		1.27	1.27		1.27	1.27	0	3804.98		0.38		3812.87
Total	2.81	17.92	20.01	0.04	0	1.27	1.27	0	1.27	1.27	0	3804.98		0.38		3812.87

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.17	0	0.02	0.01	0.03	0	0.01	0.01		54.77		0		54.8
Worker	0.11	0.11	1.15	0	0.19	0.01	0.2	0.01	0.01	0.01		170.71		0.01		170.94
Total	0.14	0.44	1.32	0	0.21	0.02	0.23	0.01	0.02	0.02		225.48		0.01		225.74

3.7 Shell Construction - 2013

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	lb/day										lb/day					
Off-Road	1.17	7.66	5.26	0.01		0.64	0.64		0.64	0.64		791.7		0.11		793.91
Total	1.17	7.66	5.26	0.01		0.64	0.64		0.64	0.64		791.7		0.11		793.91

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.17	0	0.02	0.01	0.03	0	0.01	0.01		54.77		0		54.8
Worker	0.2	0.19	2.05	0	0.37	0.01	0.39	0.01	0.01	0.03		304.84		0.02		305.25
Total	0.23	0.52	2.22	0	0.39	0.02	0.42	0.01	0.02	0.04		359.61		0.02		360.05

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	lb/day										lb/day					
Off-Road	0.84	5.65	5.09	0.01		0.46	0.46		0.46	0.46	0	791.7		0.11		793.91
Total	0.84	5.65	5.09	0.01		0.46	0.46		0.46	0.46	0	791.7		0.11		793.91

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.17	0	0.02	0.01	0.03	0	0.01	0.01		54.77		0		54.8
Worker	0.2	0.19	2.05	0	0.34	0.01	0.35	0.01	0.01	0.03		304.84		0.02		305.25
Total	0.23	0.52	2.22	0	0.36	0.02	0.38	0.01	0.02	0.04		359.61		0.02		360.05

3.8 Paving - 2013

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	lb/day										lb/day					
Off-Road	2.29	15.67	10.09	0.02		1.16	1.16		1.16	1.16		1532.32		0.21		1536.64
Paving	0.67					0	0		0	0						0
Total	2.96	15.67	10.09	0.02		1.16	1.16		1.16	1.16		1532.32		0.21		1536.64

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.17	0	0.02	0.01	0.03	0	0.01	0.01		54.77		0		54.8
Worker	0.11	0.11	1.15	0	0.21	0.01	0.22	0.01	0.01	0.01		170.71		0.01		170.94
Total	0.14	0.44	1.32	0	0.23	0.02	0.25	0.01	0.02	0.02		225.48		0.01		225.74

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	lb/day										lb/day					
Off-Road	1.76	11.12	10.22	0.02		0.98	0.98		0.98	0.98	0	1532.32		0.21		1536.64
Paving	0.67					0	0		0	0						0
Total	2.43	11.12	10.22	0.02		0.98	0.98		0.98	0.98	0	1532.32		0.21		1536.64

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.17	0	0.02	0.01	0.03	0	0.01	0.01		54.77		0		54.8
Worker	0.11	0.11	1.15	0	0.19	0.01	0.2	0.01	0.01	0.01		170.71		0.01		170.94
Total	0.14	0.44	1.32	0	0.21	0.02	0.23	0.01	0.02	0.02		225.48		0.01		225.74

3.9 Roof Construction - 2013

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	lb/day										lb/day					
Off-Road	0.61	5.82	1.72	0.01		0.2	0.2		0.2	0.2		656.31		0.05		657.45
Total	0.61	5.82	1.72	0.01		0.2	0.2		0.2	0.2		656.31		0.05		657.45

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.17	0	0.02	0.01	0.03	0	0.01	0.01		54.77		0		54.8
Worker	0.2	0.19	2.05	0	0.37	0.01	0.39	0.01	0.01	0.03		304.84		0.02		305.25
Total	0.23	0.52	2.22	0	0.39	0.02	0.42	0.01	0.02	0.04		359.61		0.02		360.05

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	lb/day										lb/day					
Off-Road	0.46	3	3	0.01		0.17	0.17		0.17	0.17	0	656.31		0.05		657.45
Total	0.46	3	3	0.01		0.17	0.17		0.17	0.17	0	656.31		0.05		657.45

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.17	0	0.02	0.01	0.03	0	0.01	0.01		54.77		0		54.8
Worker	0.2	0.19	2.05	0	0.34	0.01	0.35	0.01	0.01	0.03		304.84		0.02		305.25
Total	0.23	0.52	2.22	0	0.36	0.02	0.38	0.01	0.02	0.04		359.61		0.02		360.05

3.10 Interior Construction - 2013

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	lb/day										lb/day					
Off-Road	1.47	10.57	7.76	0.01		0.69	0.69		0.69	0.69		1286.38		0.13		1289.13
Total	1.47	10.57	7.76	0.01		0.69	0.69		0.69	0.69		1286.38		0.13		1289.13

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.17	0	0.02	0.01	0.03	0	0.01	0.01		54.77		0		54.8
Worker	0.2	0.19	2.05	0	0.37	0.01	0.39	0.01	0.01	0.03		304.84		0.02		305.25
Total	0.23	0.52	2.22	0	0.39	0.02	0.42	0.01	0.02	0.04		359.61		0.02		360.05

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	lb/day										lb/day					
Off-Road	1.19	7.91	8.31	0.01		0.65	0.65		0.65	0.65	0	1286.38		0.13		1289.13
Total	1.19	7.91	8.31	0.01		0.65	0.65		0.65	0.65	0	1286.38		0.13		1289.13

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.17	0	0.02	0.01	0.03	0	0.01	0.01		54.77		0		54.8
Worker	0.2	0.19	2.05	0	0.34	0.01	0.35	0.01	0.01	0.03		304.84		0.02		305.25
Total	0.23	0.52	2.22	0	0.36	0.02	0.38	0.01	0.02	0.04		359.61		0.02		360.05

3.11 Architectural Coating - 2013

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	lb/day										lb/day					
Archit. Coating	57.89					0	0		0	0						0
Off-Road	0.27	1.64	1.08	0		0.15	0.15		0.15	0.15		156.22		0.02		156.72
Total	58.16	1.64	1.08	0		0.15	0.15		0.15	0.15		156.22		0.02		156.72

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0	0	0	0	0	0	0	0	0	0		0		0		0
Worker	0.02	0.02	0.16	0	0.03	0	0.03	0	0	0		24.39		0		24.42
Total	0.02	0.02	0.16	0	0.03	0	0.03	0	0	0		24.39		0		24.42

Castro Village Shopping Center

Alameda County, Summer

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	lb/day										lb/day					
Archit. Coating	57.89					0	0		0	0						0
Off-Road	0.27	1.64	1.08	0		0.15	0.15		0.15	0.15	0	156.22		0.02		156.72
Total	58.16	1.64	1.08	0		0.15	0.15		0.15	0.15	0	156.22		0.02		156.72

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0	0	0	0	0	0	0	0	0	0		0		0		0
Worker	0.02	0.02	0.16	0	0.03	0	0.03	0	0	0		24.39		0		24.42
Total	0.02	0.02	0.16	0	0.03	0	0.03	0	0	0		24.39		0		24.42

Castro Village Shopping Center
Alameda County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Parking Lot	229	Space
Free-Standing Discount Store	25	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Pacific Gas & Electric Company
Climate Zone	5		2.2		
		Precipitation Freq (Days)			
			63		

1.3 User Entered Comments

Project Characteristics -

Land Use - Based on project description

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2013	59.88	41.8	28.11	0.05	2.2	2.46	3.9	0.03	2.46	2.48	0	5129.03	0	0.51	0	5139.78
Total	59.88	41.8	28.11	0.05	2.2	2.46	3.9	0.03	2.46	2.48	0	5129.03	0	0.51	0	5139.78

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	lb/day										lb/day					
2013	59.61	24.56	28.5	0.05	1.69	1.77	3.03	0.03	1.77	1.79	0	5129.03	0	0.51	0	5139.78
Total	59.61	24.56	28.5	0.05	1.69	1.77	3.03	0.03	1.77	1.79	0	5129.03	0	0.51	0	5139.78

3.0 Construction Detail

3.2 Building Demolition - 2013

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	lb/day										lb/day					
Fugitive Dust					0.34	0	0.34	0	0	0						0
Off-Road	1.64	11.35	8.64	0.01		0.82	0.82		0.82	0.82		1346.47		0.15		1349.55
Total	1.64	11.35	8.64	0.01	0.34	0.82	1.16	0	0.82	0.82		1346.47		0.15		1349.55

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	lb/day										lb/day					
Hauling	0.22	2.62	1.24	0	1.13	0.09	1.22	0.01	0.09	0.1		395.78		0.01		396
Vendor	0.01	0.17	0.1	0	0.01	0.01	0.01	0	0.01	0.01		27.16		0		27.17
Worker	0.05	0.05	0.46	0	0.09	0	0.09	0	0	0.01		65.19		0		65.28
Total	0.28	2.84	1.8	0	1.23	0.1	1.32	0.01	0.1	0.12		488.13		0.01		488.45

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	lb/day										lb/day					
Fugitive Dust					0.15	0	0.15	0	0	0						0
Off-Road	1.08	6.67	8.77	0.01		0.62	0.62		0.62	0.62	0	1346.47		0.15		1349.55
Total	1.08	6.67	8.77	0.01	0.15	0.62	0.77	0	0.62	0.62	0	1346.47		0.15		1349.55

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	lb/day										lb/day					
Hauling	0.22	2.62	1.24	0	1.03	0.09	1.12	0.01	0.09	0.1		395.78		0.01		396
Vendor	0.01	0.17	0.1	0	0.01	0.01	0.01	0	0.01	0.01		27.16		0		27.17
Worker	0.05	0.05	0.46	0	0.08	0	0.08	0	0	0.01		65.19		0		65.28
Total	0.28	2.84	1.8	0	1.12	0.1	1.21	0.01	0.1	0.12		488.13		0.01		488.45

3.3 Building Grading - 2013

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	lb/day										lb/day					
Fugitive Dust					0.37	0	0.37	0	0	0						0
Off-Road	4.21	33.15	19.45	0.04		1.78	1.78		1.78	1.78		3804.98		0.38		3812.87
Total	4.21	33.15	19.45	0.04	0.37	1.78	2.15	0	1.78	1.78		3804.98		0.38		3812.87

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	lb/day										lb/day					
Hauling	0.31	3.64	1.73	0.01	1.41	0.12	1.54	0.02	0.12	0.14		549.69		0.01		550.01
Vendor	0	0	0	0	0	0	0	0	0	0		0		0		0
Worker	0.11	0.11	1	0	0.19	0.01	0.2	0.01	0.01	0.01		141.24		0.01		141.44
Total	0.42	3.75	2.73	0.01	1.6	0.13	1.74	0.03	0.13	0.15		690.93		0.02		691.45

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	lb/day										lb/day					
Fugitive Dust					0.16	0	0.16	0	0	0						0
Off-Road	2.81	17.92	20.01	0.04		1.27	1.27		1.27	1.27	0	3804.98		0.38		3812.87
Total	2.81	17.92	20.01	0.04	0.16	1.27	1.43	0	1.27	1.27	0	3804.98		0.38		3812.87

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	lb/day										lb/day					
Hauling	0.31	3.64	1.73	0.01	1.29	0.12	1.41	0.02	0.12	0.14		549.69		0.01		550.01
Vendor	0	0	0	0	0	0	0	0	0	0		0		0		0
Worker	0.11	0.11	1	0	0.18	0.01	0.18	0.01	0.01	0.01		141.24		0.01		141.44
Total	0.42	3.75	2.73	0.01	1.47	0.13	1.59	0.03	0.13	0.15		690.93		0.02		691.45

3.4 Parking Demolition - 2013

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	lb/day										lb/day					
Fugitive Dust					0.64	0	0.64	0	0	0						0
Off-Road	1.64	11.35	8.64	0.01		0.82	0.82		0.82	0.82		1346.47		0.15		1349.55
Total	1.64	11.35	8.64	0.01	0.64	0.82	1.46	0	0.82	0.82		1346.47		0.15		1349.55

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	lb/day										lb/day					
Hauling	0.09	1.09	0.52	0	0.94	0.04	0.97	0.01	0.04	0.04		164.91		0		165
Vendor	0.03	0.33	0.2	0	0.02	0.01	0.03	0	0.01	0.01		54.31		0		54.34
Worker	0.12	0.12	1.07	0	0.21	0.01	0.22	0.01	0.01	0.01		152.11		0.01		152.32
Total	0.24	1.54	1.79	0	1.17	0.06	1.22	0.02	0.06	0.06		371.33		0.01		371.66

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	lb/day										lb/day					
Fugitive Dust					0.27	0	0.27	0	0	0						0
Off-Road	1.08	6.67	8.77	0.01		0.62	0.62		0.62	0.62	0	1346.47		0.15		1349.55
Total	1.08	6.67	8.77	0.01	0.27	0.62	0.89	0	0.62	0.62	0	1346.47		0.15		1349.55

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	lb/day										lb/day					
Hauling	0.09	1.09	0.52	0	0.85	0.04	0.89	0.01	0.04	0.04		164.91		0		165
Vendor	0.03	0.33	0.2	0	0.02	0.01	0.03	0	0.01	0.01		54.31		0		54.34
Worker	0.12	0.12	1.07	0	0.19	0.01	0.2	0.01	0.01	0.01		152.11		0.01		152.32
Total	0.24	1.54	1.79	0	1.06	0.06	1.12	0.02	0.06	0.06		371.33		0.01		371.66

3.5 Foundation, Trenching - 2013

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	lb/day										lb/day					
Off-Road	1.46	9.61	7.43	0.01		0.81	0.81		0.81	0.81		1089.31		0.13		1092.05
Total	1.46	9.61	7.43	0.01		0.81	0.81		0.81	0.81		1089.31		0.13		1092.05

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.2	0	0.02	0.01	0.03	0	0.01	0.01		54.31		0		54.34
Worker	0.21	0.21	1.92	0	0.37	0.01	0.39	0.01	0.01	0.03		271.62		0.02		272
Total	0.24	0.54	2.12	0	0.39	0.02	0.42	0.01	0.02	0.04		325.93		0.02		326.34

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	lb/day										lb/day					
Off-Road	0.96	5.75	7.09	0.01		0.58	0.58		0.58	0.58	0	1089.31		0.13		1092.05
Total	0.96	5.75	7.09	0.01		0.58	0.58		0.58	0.58	0	1089.31		0.13		1092.05

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.2	0	0.02	0.01	0.03	0	0.01	0.01		54.31		0		54.34
Worker	0.21	0.21	1.92	0	0.34	0.01	0.35	0.01	0.01	0.03		271.62		0.02		272
Total	0.24	0.54	2.12	0	0.36	0.02	0.38	0.01	0.02	0.04		325.93		0.02		326.34

3.6 Parking Grading - 2013

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	lb/day										lb/day					
Fugitive Dust					0	0	0	0	0	0						0
Off-Road	4.21	33.15	19.45	0.04		1.78	1.78		1.78	1.78		3804.98		0.38		3812.87
Total	4.21	33.15	19.45	0.04	0	1.78	1.78	0	1.78	1.78		3804.98		0.38		3812.87

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.2	0	0.02	0.01	0.03	0	0.01	0.01		54.31		0		54.34
Worker	0.12	0.12	1.07	0	0.21	0.01	0.22	0.01	0.01	0.01		152.11		0.01		152.32
Total	0.15	0.45	1.27	0	0.23	0.02	0.25	0.01	0.02	0.02		206.42		0.01		206.66

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	lb/day										lb/day					
Fugitive Dust					0	0	0	0	0	0						0
Off-Road	2.81	17.92	20.01	0.04		1.27	1.27		1.27	1.27	0	3804.98		0.38		3812.87
Total	2.81	17.92	20.01	0.04	0	1.27	1.27	0	1.27	1.27	0	3804.98		0.38		3812.87

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.2	0	0.02	0.01	0.03	0	0.01	0.01		54.31		0		54.34
Worker	0.12	0.12	1.07	0	0.19	0.01	0.2	0.01	0.01	0.01		152.11		0.01		152.32
Total	0.15	0.45	1.27	0	0.21	0.02	0.23	0.01	0.02	0.02		206.42		0.01		206.66

3.7 Shell Construction - 2013

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	lb/day										lb/day					
Off-Road	1.17	7.66	5.26	0.01		0.64	0.64		0.64	0.64		791.7		0.11		793.91
Total	1.17	7.66	5.26	0.01		0.64	0.64		0.64	0.64		791.7		0.11		793.91

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.2	0	0.02	0.01	0.03	0	0.01	0.01		54.31		0		54.34
Worker	0.21	0.21	1.92	0	0.37	0.01	0.39	0.01	0.01	0.03		271.62		0.02		272
Total	0.24	0.54	2.12	0	0.39	0.02	0.42	0.01	0.02	0.04		325.93		0.02		326.34

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	lb/day										lb/day					
Off-Road	0.84	5.65	5.09	0.01		0.46	0.46		0.46	0.46	0	791.7		0.11		793.91
Total	0.84	5.65	5.09	0.01		0.46	0.46		0.46	0.46	0	791.7		0.11		793.91

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.2	0	0.02	0.01	0.03	0	0.01	0.01		54.31		0		54.34
Worker	0.21	0.21	1.92	0	0.34	0.01	0.35	0.01	0.01	0.03		271.62		0.02		272
Total	0.24	0.54	2.12	0	0.36	0.02	0.38	0.01	0.02	0.04		325.93		0.02		326.34

3.8 Paving - 2013

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	lb/day										lb/day					
Off-Road	2.29	15.67	10.09	0.02		1.16	1.16		1.16	1.16		1532.32		0.21		1536.64
Paving	0.67					0	0		0	0						0
Total	2.96	15.67	10.09	0.02		1.16	1.16		1.16	1.16		1532.32		0.21		1536.64

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.2	0	0.02	0.01	0.03	0	0.01	0.01		54.31		0		54.34
Worker	0.12	0.12	1.07	0	0.21	0.01	0.22	0.01	0.01	0.01		152.11		0.01		152.32
Total	0.15	0.45	1.27	0	0.23	0.02	0.25	0.01	0.02	0.02		206.42		0.01		206.66

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	lb/day										lb/day					
Off-Road	1.76	11.12	10.22	0.02		0.98	0.98		0.98	0.98	0	1532.32		0.21		1536.64
Paving	0.67					0	0		0	0						0
Total	2.43	11.12	10.22	0.02		0.98	0.98		0.98	0.98	0	1532.32		0.21		1536.64

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.2	0	0.02	0.01	0.03	0	0.01	0.01		54.31		0		54.34
Worker	0.12	0.12	1.07	0	0.19	0.01	0.2	0.01	0.01	0.01		152.11		0.01		152.32
Total	0.15	0.45	1.27	0	0.21	0.02	0.23	0.01	0.02	0.02		206.42		0.01		206.66

3.9 Roof Construction - 2013

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	lb/day										lb/day					
Off-Road	0.61	5.82	1.72	0.01		0.2	0.2		0.2	0.2		656.31		0.05		657.45
Total	0.61	5.82	1.72	0.01		0.2	0.2		0.2	0.2		656.31		0.05		657.45

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.2	0	0.02	0.01	0.03	0	0.01	0.01		54.31		0		54.34
Worker	0.21	0.21	1.92	0	0.37	0.01	0.39	0.01	0.01	0.03		271.62		0.02		272
Total	0.24	0.54	2.12	0	0.39	0.02	0.42	0.01	0.02	0.04		325.93		0.02		326.34

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	lb/day										lb/day					
Off-Road	0.46	3	3	0.01		0.17	0.17		0.17	0.17	0	656.31		0.05		657.45
Total	0.46	3	3	0.01		0.17	0.17		0.17	0.17	0	656.31		0.05		657.45

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.2	0	0.02	0.01	0.03	0	0.01	0.01		54.31		0		54.34
Worker	0.21	0.21	1.92	0	0.34	0.01	0.35	0.01	0.01	0.03		271.62		0.02		272
Total	0.24	0.54	2.12	0	0.36	0.02	0.38	0.01	0.02	0.04		325.93		0.02		326.34

3.10 Interior Construction - 2013

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	lb/day										lb/day					
Off-Road	1.47	10.57	7.76	0.01		0.69	0.69		0.69	0.69		1286.38		0.13		1289.13
Total	1.47	10.57	7.76	0.01		0.69	0.69		0.69	0.69		1286.38		0.13		1289.13

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.2	0	0.02	0.01	0.03	0	0.01	0.01		54.31		0		54.34
Worker	0.21	0.21	1.92	0	0.37	0.01	0.39	0.01	0.01	0.03		271.62		0.02		272
Total	0.24	0.54	2.12	0	0.39	0.02	0.42	0.01	0.02	0.04		325.93		0.02		326.34

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	lb/day										lb/day					
Off-Road	1.19	7.91	8.31	0.01		0.65	0.65		0.65	0.65	0	1286.38		0.13		1289.13
Total	1.19	7.91	8.31	0.01		0.65	0.65		0.65	0.65	0	1286.38		0.13		1289.13

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0.03	0.33	0.2	0	0.02	0.01	0.03	0	0.01	0.01		54.31		0		54.34
Worker	0.21	0.21	1.92	0	0.34	0.01	0.35	0.01	0.01	0.03		271.62		0.02		272
Total	0.24	0.54	2.12	0	0.36	0.02	0.38	0.01	0.02	0.04		325.93		0.02		326.34

3.11 Architectural Coating - 2013

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	lb/day										lb/day					
Archit. Coating	57.89					0	0		0	0						0
Off-Road	0.27	1.64	1.08	0		0.15	0.15		0.15	0.15		156.22		0.02		156.72
Total	58.16	1.64	1.08	0		0.15	0.15		0.15	0.15		156.22		0.02		156.72

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0	0	0	0	0	0	0	0	0	0		0		0		0
Worker	0.02	0.02	0.15	0	0.03	0	0.03	0	0	0		21.73		0		21.76
Total	0.02	0.02	0.15	0	0.03	0	0.03	0	0	0		21.73		0		21.76

Castro Village Shopping Center

Alameda County, Winter

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	lb/day										lb/day					
Archit. Coating	57.89					0	0		0	0						0
Off-Road	0.27	1.64	1.08	0		0.15	0.15		0.15	0.15	0	156.22		0.02		156.72
Total	58.16	1.64	1.08	0		0.15	0.15		0.15	0.15	0	156.22		0.02		156.72

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	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0		0		0
Vendor	0	0	0	0	0	0	0	0	0	0		0		0		0
Worker	0.02	0.02	0.15	0	0.03	0	0.03	0	0	0		21.73		0		21.76
Total	0.02	0.02	0.15	0	0.03	0	0.03	0	0	0		21.73		0		21.76