

VALIANO PROJECT

APPENDIX C
AIR QUALITY ANALYSIS REPORT
for the
DRAFT ENVIRONMENTAL IMPACT REPORT

PDS2013-SP-13-001, PDS2013-GPA-13-001,
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COVER PAGE

VALIANO PROJECT ENVIRONMENTAL IMPACT REPORT APPENDIX C AIR QUALITY ANALYSIS REPORT

Since circulation of the Draft Valiano Project Environmental Impact Report (DEIR), Recirculated Draft EIR (RDEIR), and associated technical reports, there have been several changes in the project description.

The site plan has been revised to eliminate the northern single-loaded street in Neighborhood 3 which included four single-family dwelling units. The overall residential lot count remains at 326 due to slight re-configuration within Neighborhoods 1, 3 and 4 to accommodate the four lots. Elimination of this street resulted in reduced grading quantity. In addition, firewalls and other enhanced fire safety measures have been incorporated into the Project design to eliminate the requirement for off-site revegetation clearing.

None of these changes would result in new impacts or increased impacts to air quality. Therefore, the technical report has not been revised since circulation of the DEIR or RDEIR.

Air Quality Analysis Report

Valiano Project

PDS2013-SP-13-001, PDS2013-GPA-13-001,
PDS2013-STP-13-003, PDS2013-TM-5575,
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Glossary of Terms and Acronyms

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
ADT	average daily trips
AMSL	above mean sea level
ANFO	ammonium nitrate/fuel oil
AQIA	Air Quality Impact Assessment
BAAQMD	Bay Area Air Quality Management District
BMPs	best management practices
CAA	Clean Air Act (Federal)
CAAQS	California Ambient Air Quality Standard
CalEEMod	California Emission Estimator Model
CalEPA	California Environmental Protection Agency
CALINE4	California Line Source Dispersion Model (Version 4)
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEQA	California Environmental Quality Act
CO	carbon monoxide
County	County of San Diego
cy	cubic yards
DPM	diesel particulate matter
du	dwelling unit
ERTC	Escondido Research and Technology Center
F	Fahrenheit (degrees)
f/s	feet per second
g/L	grams per liter
H ₂ S	hydrogen sulfide
HAPs	hazardous air pollutants
HI	hazard index
hp	horsepower
HQ	hazard quotient
I-15	Interstate-15

Glossary of Terms and Acronyms (cont.)

lbs	pounds
LOS	level of service
MEI	maximum exposed individual
mgd	million gallons per day
mph	miles per hour
m/s	meters per second
NAAQS	National Ambient Air Quality Standard
NO	nitrogen oxide
NO _x	oxides of nitrogen
NO ₂	nitrogen dioxide
O ₃	ozone
OEHHA	California Office of Environmental Health Hazard Assessment
Pb	lead
PDS	Planning and Development Services
PM _{2.5}	fine particulate matter (particulate matter with an aerodynamic diameter of 2.5 microns or less)
PM ₁₀	respirable particulate matter (particulate matter with an aerodynamic diameter of 10 microns or less)
ppb	parts per billion
ppm	parts per million
PVC	polyvinyl chloride
RAQS	San Diego County Regional Air Quality Strategy
REL	reference exposure levels
Rincon MWD	Rincon Del Diablo Municipal Water District
RW	Reclaimed Water
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
SCAQMD	South Coast Air Quality Management District
SDAB	San Diego Air Basin
SDAPCD	San Diego County Air Pollution Control District
SDG&E	San Diego Gas & Electric
SIP	State Implementation Plan
SLT	significance level threshold
SO _x	oxides of sulfur
SO ₂	sulfur dioxide
SR	State Route

Glossary of Terms and Acronyms (cont.)

TACs	Toxic Air Contaminants
T-BACT	Toxics Best Available Control Technology
TIA	Traffic Impact Analysis
TIF	Traffic Impact Fee
TSP	total suspended particulate
USEPA	U.S. Environmental Protection Agency
VMT	vehicle miles traveled
VOCs	volatile organic compounds
WTWRF	wastewater treatment and water reclamation facility

EXECUTIVE SUMMARY

This report presents an assessment of potential air quality impacts associated with the proposed Valiano Project (Project). The evaluation addresses the potential for air pollutant emissions during construction and after full buildout of the Project, including an assessment of the potential for carbon monoxide (CO) “hot spots” to form due to traffic associated with the Project.

The Project would exceed the growth projections in the San Diego Association of Governments (SANDAG) growth forecasts for the San Marcos and Escondido Subregional Areas. As discussed in Section 4.1.2, the Project would increase density in terms of the number of dwelling units (DUs) compared to what was assumed in the County of San Diego General Plan. This could create potential interference with the Regional Air Quality Strategy (RAQS), and, therefore, Project-level and cumulative impacts would be significant.

The Project would result in emissions of air pollutants during both the construction phase and operational phase of the Project. Construction emissions would include emissions associated with fugitive dust, heavy construction equipment, and construction workers commuting to and from the site. All off-road construction equipment is required to meet the minimum application of U.S. Environmental Protection Agency (USEPA) Tier 4 engines, to install CARB-approved diesel particulate filter devices, and to apply best management practices to control and minimize emissions. The Project would incorporate measures to minimize fugitive dust control emissions, including watering two times per day during grading and stabilization of storage piles. Construction activities are assumed to begin January 2016 and finish in mid-2019. Building construction for some neighborhoods may overlap with previously constructed neighborhoods that are occupied and in operation. Under a worst-case daily scenario of overlapping construction and operational activities, emission of criteria pollutants would not exceed the significance thresholds. With the implementation of the USEPA Tier 4 engines and fugitive dust control measures, short-term impacts associated with the construction activities would be less than significant. However, it is possible that construction associated with several other projects would occur in the general vicinity of the Project at the same time, and cumulative construction projects would result in a significant, but temporary, cumulative impact.

The main operational emissions associated with the Project would include impacts associated with vehicular traffic, as well as area sources such as energy use, landscaping, and the use of consumer products. A wide range of current regulatory codes, Project design features, and other measures would be incorporated into the Proposed Project. The Project would incorporate energy-efficiency features in accordance with 2013 California Title 24 Energy Efficiency Standards that would exceed 2008 California Title 24 Energy Efficiency Standards by a minimum of 15 percent. The installation of natural gas fireplaces would prevent residences from using wood as fuel for fire and prevent the generation of particulate emissions in the area. The installation of low-flow or high-efficiency water fixtures in residences reduces water demand, and its associated embodied energy demand, and associated indirect air quality emissions. The Project would provide areas for recyclable materials collection and would use building products that have at least a 10-percent recycle content. These Project design features were selected under the mitigation measure menu in the California Emission Estimator Model (CalEEMod). Emissions of criteria pollutants during operation for the Project at buildout would not exceed the

daily significance thresholds, and no CO hot spots would occur. Therefore, no significant air quality impact is anticipated and mitigation measures are not required.

Quantitative screening-level health risk assessments were conducted to assess impacts to sensitive receptors from toxic air contaminants (TACs) during construction activities as well as operation of the wastewater treatment and water reclamation facility (WTWRF). Both construction and operation impacts were found to be less than significant.

An evaluation of potential odors from construction activities, the proposed WTWRF and its sewer pump stations, and equestrian uses indicated that associated impacts would be less than significant.

1.0 INTRODUCTION

1.1 Purpose of the Report

This report presents an analysis of potential air quality impacts associated with the proposed Valiano Project (Project), which includes an evaluation of existing conditions in the Project vicinity, an assessment of potential impacts associated with Project construction, and an evaluation of Project operational impacts. The analysis of impacts is based on state and federal ambient air quality standards and impacts are assessed in accordance with the guidelines, policies, and standards established by the County of San Diego (County) and the San Diego Air Pollution Control District (SDAPCD). The Project's compatibility with the adopted air quality plan for the area is also described. Measures are recommended, as required, to reduce potentially significant impacts.

1.2 Project Location and Description

The Project includes an approximately 239-acre site in an unincorporated portion of San Diego County within the Eden Valley portion of the San Dieguito Community Planning Area near the cities of San Marcos and Escondido. The Project site is located approximately 1.5 miles west of Interstate 15 (I-15) and 0.6 mile south of State Route (SR) 78 at its closest points. Principal site access is from SR-78, Nordahl Road, and Country Club Drive, from which a number of smaller surface streets (e.g., Hill Valley Drive, Eden Valley Lane and Mt. Whitney Road) extend along or near the northern and eastern property boundaries.

The Project consists of a gated residential community with 326 single-family dwelling units (DUs) and related facilities within a total developed area of approximately 92 acres. Since preparation of the Traffic Impact Analysis (TIA) prepared in April 2014, the Proposed Project's residential units have been reduced from 334 residential units to 326 residential units for a decrease of 8 units. The trip generation calculations provided in the TIA utilize the 334 residential units, which represents a conservative analysis and this same number is utilized in this air quality report. In addition, the Proposed Project includes up to 54 second units within Neighborhoods 2, 3 and 5 which could be attached or detached from the main unit.

The residential development is divided into five distinct neighborhoods. The proposed development also incorporates a number of related amenities and facilities, including a 2.3-acre private Community Park and Recreation Center, a 1.2-acre private park, a 0.5-acre Trail Head Park, a 2.6-acre public Neighborhood Park, an on-site wastewater treatment and water reclamation facility (WTWRF) and wet weather storage area, three pump (lift) stations and an existing barn complex in the southeastern portion of the site that would be retained.

Wastewater generated by the Proposed Project would be treated by an on-site WTWRF which would be owned and operated by the San Diego County Sanitation District. The County WTWRF design has developed specific design criteria and standards for an "Aero-Mod" wastewater treatment plant, a plant process design that is currently being used in the Rancho Santa Fe Community Facilities District. "Aero-Mod" is a company based in Kansas that offers a packaged wastewater treatment plant approach based on the extensive use of "common-wall"

construction between basins, performing a version of the extended aeration wastewater treatment process. Extended aeration is a conservative approach to the activated sludge process that relies upon treating the wastewater for an extended period of time (approximately 24 hours on average).

A summary of WTWRF plant components include but not limited to the following:

- Headworks providing fine screening of the influent wastewater.
- Equalization basin to balance out variations in flow by storing a portion of the peak flows received for treatment in the plant during low-flow periods.
- Aeration basins and anoxic basins performing the activated sludge process along with biological nitrogen removal.
- Clarifier basins to settle most of the solids out of the wastewater to yield a clarified flow that goes to filters for further turbidity removal.
- Filters for further removal of turbidity to produce reclaimed water meeting Title 22 standards for effluent clarity.
- Chlorine contact basins for disinfection of the reclaimed water by chlorine solution.
- Residual solids processing. The Aero-Mod process typically includes digester basins for further reduction of the settled solids produced by the treatment process. However, at a plant as small as the Proposed Project's plant would be, it would probably be more efficient to just thicken the solids and transfer them to the Harmony Grove WTWRF for further processing.
- An operations/laboratory building providing space for employees to store their personal items, restrooms and showers for employees, some desk space and a small laboratory for use in operational control of the plant.

WTWRF Operations

The Project would be required to construct wet weather storage to meet the Regional Water Quality Control Board's (RWQCB) requirement for approximately 90 days of recycled water storage. Therefore, a total of 6.4 million gallons of storage would be provided at the proposed 1.6-acre wet weather storage area located north of Neighborhood 5.

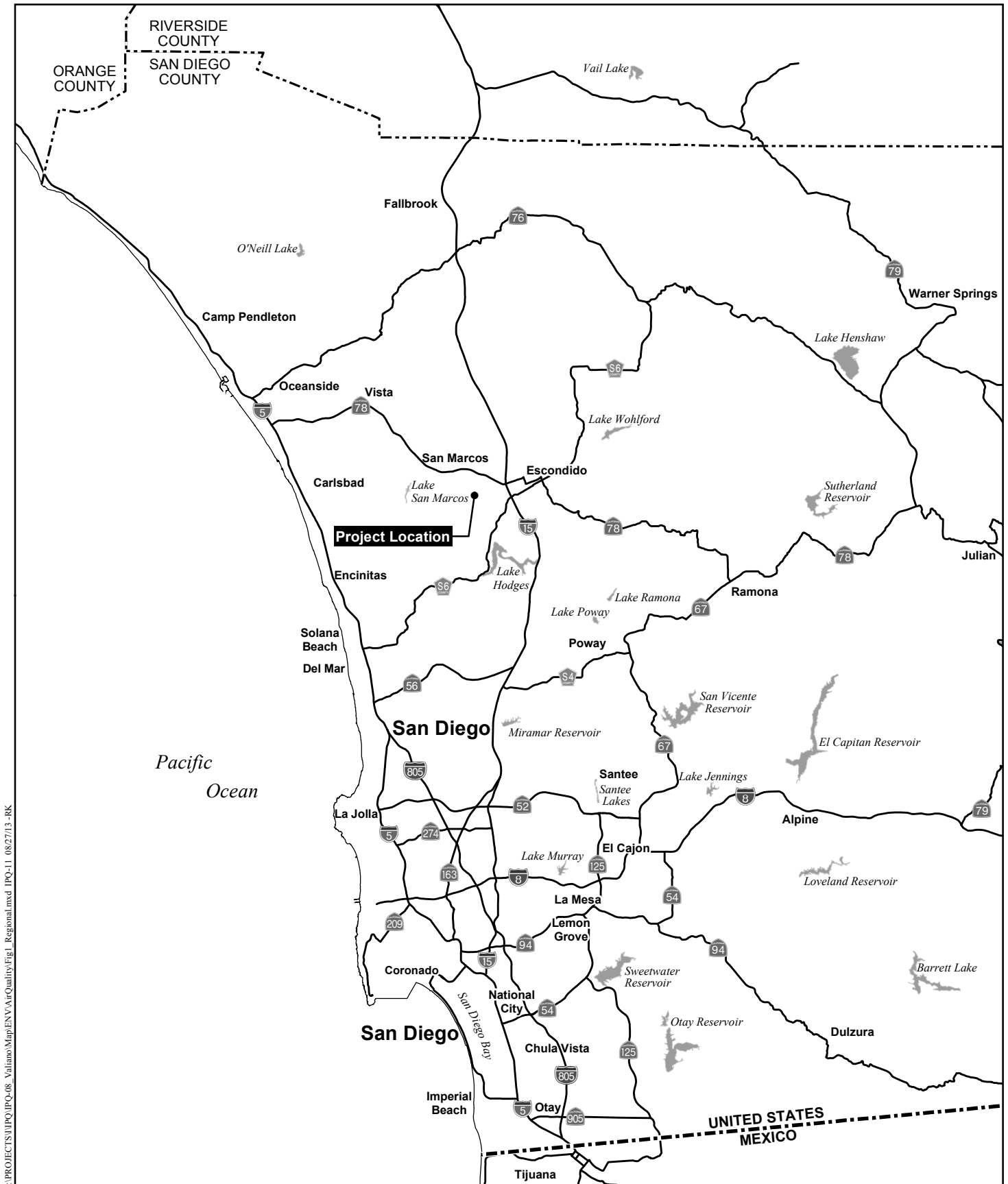
Figure 1 provides the regional location map of the Project, and Figure 2 provides the site location map of the Project site.

1.3 Project Design Features and Best Management Practices

Construction

The Project would incorporate best management practices (BMPs) during construction to reduce emissions of fugitive dust. SDAPCD Rule 55 – Fugitive Dust Control states that no dust and/or dirt shall leave the property line. SDAPCD Rule 55 requires the following:

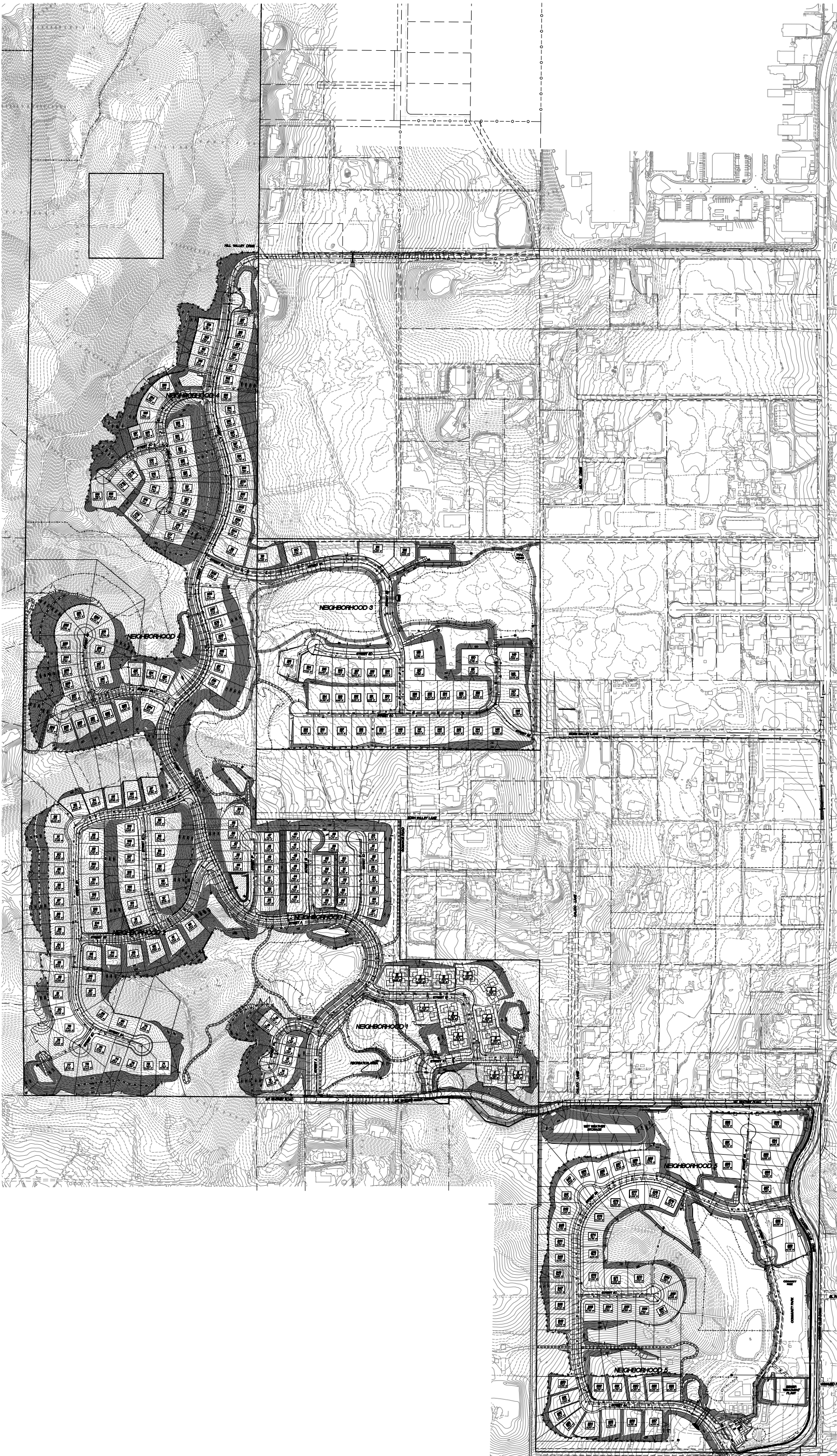




Regional Location Map

VALIANO

Figure 1



Source: Fuscoe Engineering 2014

Project Site Plan

- (1) **Airborne Dust Beyond the Property Line:** No person shall engage in construction or demolition activity subject to this rule in a manner that discharges visible dust emissions into the atmosphere beyond the property line for a period or periods aggregating more than 3 minutes in any 60 minute period.
- (2) **Track-Out/Carry-Out:** Visible roadway dust as a result of active operations, spillage from transport trucks, erosion, or track-out/carry-out shall:
 - (i) be minimized by the use of any of the following or equally effective trackout/carry-out and erosion control measures that apply to the Project or operation:
 - a. track-out grates or gravel beds at each egress point,
 - b. wheel-washing at each egress during muddy conditions, soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding; and for outbound transport trucks;
 - c. secured tarps or cargo covering, watering, or treating of transported material; and
 - (ii) be removed at the conclusion of each work day when active operations cease, or every 24 hours for continuous operations. If a street sweeper is used to remove any track-out/carry-out, only PM₁₀-efficient street sweepers certified to meet the most current South Coast Air Quality Management District (SCAQMD) Rule 1186 requirements shall be used. The use of blowers for removal of track-out/ carry-out is prohibited under any circumstances.

The control measures listed below are the BMPs that the Project would incorporate for dust control as well as minimizing pollutant emissions from diesel equipment:

- A minimum of two applications of water during grading between dozer/scrapper passes.
- Paving, chip sealing or chemical stabilization of internal roadways after completion of grading.
- Use of sweepers or water trucks to remove “track-out” at any point of public street access.
- Termination of grading if winds exceed 25 miles per hour (mph).
- Dirt storage piles will be stabilized by chemical binders, tarps, fencing or other erosion control.
- Disturbed areas shall be hydroseeded, landscaped, or developed as quickly as possible and as directed by the County and/or SDAPCD to reduce dust generation.
- A 15-mph speed limit will be enforced on unpaved surfaces.
- On dry days, dirt and debris spilled onto paved surfaces shall be swept up immediately to reduce resuspension of particulate matter caused by vehicle movement. Approach routes to construction sites shall be cleaned daily of construction-related dirt in dry weather.

- The Project will use building products that have at least a 10 percent recycled content.
- The Project will require the construction fleet to use any combination of diesel catalytic converters, diesel oxidation catalysts, diesel particulate filters and utilize CARB/U.S. Environmental Protection Agency (USEPA) Engine Certification Tier 4, or other equivalent methods approved by the CARB.
- Use of low-VOC coatings in accordance with SDAPCD Rule 67.
- Any blasting areas would be wet down prior to initiating the blast.

Operational

The Proposed Project would incorporate the following Project design features in order to improve operational efficiencies and reduce emissions:

- Energy efficiency in compliance with 2013 Title 24 standards, which exceeds the 2008 Title 24 standards by a minimum of 15 percent.
- Installation of advanced plumbing systems, such as parallel hot water piping or hot water recirculation systems, and fixtures such as ultra-low flow toilets, water-saving showerheads and kitchen faucets, and buyer-optional high-efficiency clothes washers.
- Residential construction would only allow natural gas fireplaces.
- Educational materials (such as brochures) that provide information regarding the use of low-VOC paints and consumer products shall be provided in every residence.

The WTWRF would implement, at a minimum, the following odor control measures:

- All WTWRF facilities, including the wet weather pond, would be covered to avoid uncontrolled odor release.
- Active odor control units would be located to manage gases from the wet and solids stream treatment processes.
- All processes and equipment would be housed (or otherwise contained) and ventilation controlled such that no objectionable odors would be discernible at the Project site boundaries.
- A misting system with odor neutralizing liquids to break down the foul smelling chemical compounds in the biogases would be installed.
- Bio filters would be utilized to capture odor causing compounds in a media bed where they are oxidized by naturally occurring micro-organisms.
- Wastewater operators would routinely check the digester pressure relief valves to make sure they are not venting to the outdoors and that the waste gas burner is performing optimally.

1.4 Air Quality Assessment

This air quality assessment includes a discussion of applicable significance criteria and analysis methodologies outlined in the County's "Guidelines for Determining Significance—Air Quality" guidance document. Based on this guidance document, this assessment evaluates the short-term construction-period and long-term operational period impacts to localized and regional air quality that would result with development of the Project.

2.0 EXISTING CONDITIONS

2.1 Existing Setting

The Project site is located south of SR-78 and west of I-15 in a semi-rural area encompassing a mix of urban development, agriculture, and open space. Nearby urban development includes high-density residential and commercial uses to the north (San Marcos) and east (Escondido), with nearby areas to the north, west and south encompassing agricultural uses, low- to moderate density residential development and open space.

2.2 Climate / Meteorology and Temperature Inversions

The Project site is located in the San Diego Air Basin (SDAB). The climate of San Diego County is characterized by hot, dry summers and mild, wet winters and is dominated by a semi-permanent, high-pressure cell located over the Pacific Ocean. Wind monitoring data recorded at the Escondido monitoring station indicates that the predominant wind direction in the vicinity of the Project site is from the west. Wind speeds over the project region average 1.7 meters per second (m/s) or 5.58 feet per second (f/s). The annual average temperature in the project area is approximately 55 degrees Fahrenheit (°F) during the winter and approximately 74°F during the summer. Total precipitation in the project area averages approximately 16.2 inches annually. Precipitation occurs mostly during the winter and relatively infrequently during the summer (Western Regional Climate Center 2012).

The atmospheric conditions of the SDAB contribute to the region's air quality problems. The high pressure cell also creates two types of temperature inversions that may act to degrade local air quality. Subsidence inversions occur during the warmer months as descending air associated with the Pacific high pressure cell comes into contact with cool marine air. The boundary between the two layers of air creates a temperature inversion that traps pollutants. The other type of inversion, a radiation inversion, develops on winter nights when air near the ground cools through radiation and the air aloft remain warm. The shallow inversion layer formed between these two air masses can also trap pollutants.

Due to its climate, the SDAB experiences frequent temperature inversions. Typically, temperature decreases with height. However, under inversion conditions, temperature increases as altitude increases. Temperature inversions prevent air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. During the summer, air quality problems are created due to the interaction between the ocean surface and the lower layer of the atmosphere, creating a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons and nitrogen dioxide (NO₂) react under strong sunlight, creating smog. Light, daytime winds, predominately from the west, further aggravate the condition by driving the air pollutants inland, toward the foothills. During the fall and winter, air quality problems are created due to carbon monoxide (CO) and NO₂ emissions. High NO₂ levels usually occur during autumn or winter, on days with summer-like conditions.

It should be noted that the smog level under the inversion base is not static. It moves up and down during the day. The base of the inversion is determined by the balance of forces between convection (upward motion in the mixed layer) and subsidence (downward motion from aloft). Throughout the year, the elevation of the temperature inversion within the SDAB in the afternoon varies between approximately 1,500 and 2,500 feet above mean sea level (AMSL). In winter, the morning inversion layer is about 800 feet AMSL. In summer, the morning inversion layer is about 1,100 feet AMSL. Therefore, air quality tends to be better in winter than in summer because there is a greater change in the morning and afternoon mixing depths, allowing the dispersal of “trapped” pollutants. Elevations within the Project area range from approximately 614 feet to 1,013 feet AMSL. The finished grade would range from approximately 810 feet in the northwestern area to 685 feet in the southeastern area.

High air pollution levels in coastal communities of San Diego often occur when polluted air from the South Coast Air Basin, particularly Los Angeles, travels southwest over the ocean at night, and is brought onshore into San Diego by the sea breeze during the day. Smog transported from the Los Angeles area is a key factor on more than 50 percent of the days San Diego exceeds clean air standards. Ozone (O₃) and precursor emissions are transported to San Diego during relatively mild Santa Ana weather conditions. However, during strong Santa Ana weather conditions, pollutants are pushed far out to sea and miss San Diego. When smog is blown in from the SDAB at ground level, the highest O₃ concentrations are measured at coastal and near-coastal monitoring stations. When the transported smog is elevated, coastal sites may be passed over, and the transported ozone is measured further inland and on the mountain slopes. Figure 3 provides a graphic representation of the prevailing winds in the Project vicinity, as measured at the SDAPCD’s Escondido Monitoring Station (the closest meteorological monitoring station to the site). The high pressure cell also creates two types of temperature inversions that may act to degrade local air quality.

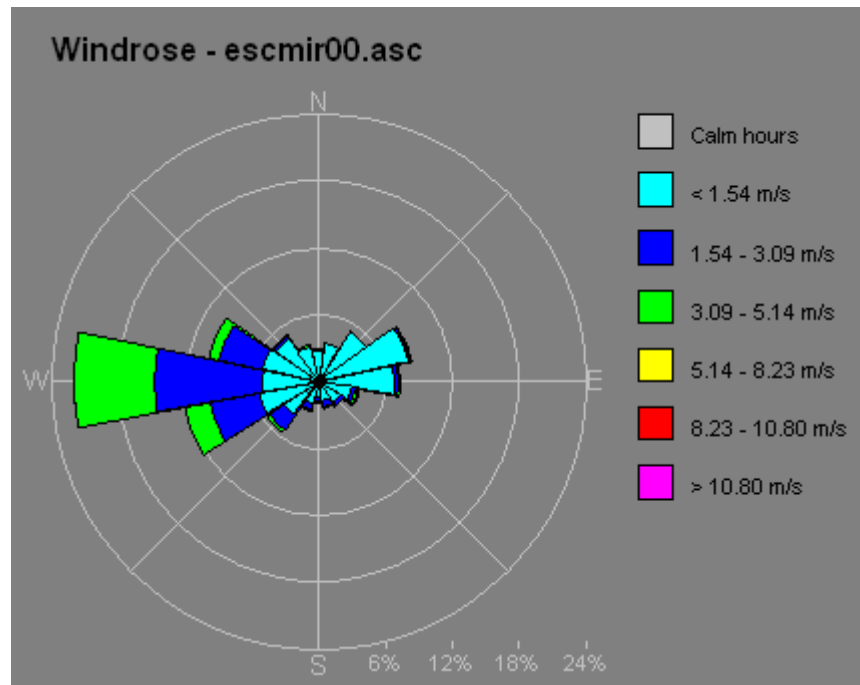


Figure 3. Wind Rose – Escondido Monitoring Station

2.2.1 Air Pollutants of Concern

Criteria Air Pollutants

Federal and state laws regulate air pollutants emitted into the ambient air by stationary and mobile sources. These regulated air pollutants are known as “criteria air pollutants” and are categorized as primary and secondary standards. Primary standards are set of limits based on human health. Another set of limits intended to prevent environmental and property damage is called secondary standards. Criteria pollutants are defined by state and federal law as a risk to the health and welfare of the general public.

The following specific descriptions of health effects for each air pollutant associated with Project construction and operation are based on USEPA (USEPA 2007) and California Air Resources Board (CARB 2009).

Ozone. Ozone (O_3) is considered a photochemical oxidant, which is a chemical that is formed when volatile organic compounds (VOCs) and oxides of nitrogen (NO_x), both by-products of fuel combustion, react in the presence of ultraviolet light. Ozone is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to ozone.

Carbon Monoxide. CO is a product of fuel combustion, and the main source of CO in the SDAB is from motor vehicle exhaust. CO is an odorless, colorless gas. CO affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be

carried to the body's organs and tissues. CO can cause health effects to those with cardiovascular disease, and can also affect mental alertness and vision.

Nitrogen Dioxide. Nitrogen dioxide (NO₂) is also a by-product of fuel combustion, and is formed both directly as a product of combustion and in the atmosphere through the reaction of nitrogen oxide (NO) with oxygen. NO₂ is a respiratory irritant and may affect those with existing respiratory illness, including asthma. NO₂ can also increase the risk of respiratory illness.

Respirable Particulate Matter and Fine Particulate Matter. Respirable particulate matter, or PM₁₀, refers to particulate matter with an aerodynamic diameter of 10 microns or less. Fine particulate matter, or PM_{2.5}, refers to particulate matter with an aerodynamic diameter of 2.5 microns or less. Particulate matter in these size ranges has been determined to have the potential to lodge in the lungs and contribute to respiratory problems. PM₁₀ and PM_{2.5} arise from a variety of sources, including road dust, diesel exhaust, fuel combustion, tire and brake wear, construction operations and windblown dust. PM₁₀ and PM_{2.5} can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases such as asthma and chronic bronchitis. PM_{2.5} is considered to have the potential to lodge deeper in the lungs.

Sulfur Dioxide. Sulfur dioxide (SO₂) is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels such as coal and oil, and by other industrial processes. Generally, the highest concentrations of SO₂ are found near large industrial sources. SO₂ is a respiratory irritant that can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term exposure to SO₂ can cause respiratory illness and aggravate existing cardiovascular disease.

Lead. Lead (Pb) in the atmosphere occurs as particulate matter. Pb has historically been emitted from vehicles combusting leaded gasoline, as well as from industrial sources. With the phase-out of leaded gasoline, large manufacturing facilities are the sources of the largest amounts of lead emissions. Pb has the potential to cause gastrointestinal, central nervous system, kidney and blood diseases upon prolonged exposure. Pb is also classified as a probable human carcinogen.

Sulfates. Sulfates are the fully oxidized ionic form of sulfur. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO₂ during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO₂ to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features. The CARB's sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and due to fact that they are usually acidic, can harm ecosystems and damage materials and property.

Hydrogen Sulfide. 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. Breathing H₂S at levels above the standard would result in exposure to a very disagreeable odor. In 1984, a CARB committee concluded that the ambient standard for H₂S is adequate to protect public health and to significantly reduce odor annoyance.

Vinyl Chloride. Vinyl chloride, 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. Short-term exposure to high levels of vinyl chloride in air causes central nervous system effects, such as dizziness, drowsiness and headaches. Long-term exposure to vinyl chloride through inhalation and oral exposure causes liver damage. Cancer is a major concern from exposure to vinyl chloride via inhalation. Vinyl chloride exposure has been shown to increase the risk of angiosarcoma, a rare form of liver cancer, in humans.

Visibility-Reducing Particles. 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. These particles in the atmosphere would obstruct the range of visibility. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze.

Toxic Air Contaminants

The public's exposure to toxic air contaminants (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 Health and Safety Code (§39655, subd. (a).) defines 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 subsection (b) of Section 112 of the Federal Clean Air Act (CAA) (42 USC Sec. 7412[b]) is a toxic air contaminant. Under State law, the California Environmental Protection Agency (CalEPA), acting through CARB, is authorized to identify a substance as a TAC if it determines the substance is an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or that may pose a present or potential hazard to human health.

Cancer Risk. One of the primary health risks of concern due to exposure to TACs is the risk of contracting cancer. The carcinogenic potential of TACs is a particular public health concern because it is currently believed by many scientists that there is no "safe" level of exposure to carcinogens; that is, any exposure to a carcinogen poses some risk of causing cancer. Health statistics show that one in four people will contract cancer over their lifetime, or 250,000 in one million, from all causes, including diet, genetic factors, and lifestyle choices.

Noncancer Health Risks. Unlike carcinogens, it is believed that there is a threshold level of exposure to most noncarcinogens below which they will not pose a health risk. CalEPA and the

California Office of Environmental Health Hazard Assessment (OEHHA) have developed reference exposure levels (RELs) for noncarcinogenic TACs that are health-conservative estimates of the levels of exposure at or below which health effects are not expected. The non-cancer health risk due to exposure to a TAC is assessed by comparing the estimated level of exposure to the REL. The comparison is expressed as the ratio of the estimated exposure level to the REL, called the hazard index (HI).

2.3 Regulatory Setting

Air quality is defined by ambient air concentrations of specific pollutants identified by the USEPA to be of concern with respect to health and welfare of the general public. The USEPA is responsible for enforcing the Federal CAA of 1970 and its 1977 and 1990 Amendments. The CAA required the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for several pollutants (called “criteria” pollutants, specifically, ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide, and lead). Primary standards are designed to protect human health with an adequate margin of safety. Secondary standards are designed to protect property and the public welfare from air pollutants in the atmosphere. Table 1 shows the federal and state ambient air quality standards.

The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. The CARB has established the more stringent California Ambient Air Quality Standards (CAAQS) for the six criteria pollutants through the California Clean Air Act of 1988 (CCAA), and also has established CAAQS for additional pollutants, including sulfates, H₂S, vinyl chloride and visibility-reducing particles. Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are considered to be “nonattainment areas” for that pollutant. On April 30, 2012, the SDAB was classified as a marginal nonattainment area for the 8-hour NAAQS for ozone. The SDAB is an attainment area for the NAAQS for all other criteria pollutants. The SDAB currently falls under a national “maintenance plan” for CO, following a 1998 redesignation as a CO attainment area (SDAPCD 2010). The SDAB is currently classified as a nonattainment area under the CAAQS for ozone (serious nonattainment), PM₁₀, and PM_{2.5} (CARB 2012a). On December 14, 2012, the federal annual standard for PM_{2.5} was decreased from 15 µg/m³ to 12 µg/m³. The new annual standard will become effective 60 days after publication in the Federal Register. The USEPA made no changes to the primary 24-hour PM_{2.5} standard or to the secondary PM_{2.5} standards. At least three years of monitoring data beginning March 14, 2013 will be necessary before the USEPA re-designates the San Diego County for the annual PM_{2.5} standard.

Table 1
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards ¹		Federal Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷
Ozone	1-Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.070 ppm (137 µg/m ³)		0.075 ppm (147 µg/m ³)		
Respirable Particulate Matter (PM ₁₀)	24-Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m ³		-		
Fine Particulate Matter (PM _{2.5}) ⁸	24-Hour	-	-	35 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	12 µg/m ³		
Carbon Monoxide (CO)	1-Hour	20 ppm (23 mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m ³)	-	Non-Dispersive Infrared Photometry (NDIR)
	8-Hour	9.0 ppm (10 mg/m ³)		9 ppm (10 mg/m ³)	-	
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m ³)		-	-	
Nitrogen Dioxide (NO ₂) ⁹	1-Hour	0.18 ppm (339 µg/m ³)	Gas Phase Chemiluminescence	0.100 ppm (188 µg/m ³)	-	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)		0.053 ppm (100 µg/m ³)	Same as Primary Standard	
Sulfur Dioxide (SO ₂) ¹⁰	1-Hour	0.25 ppm (655 µg/m ³)	Ultraviolet Fluorescence	75 ppb (196 µg/m ³)	-	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3-Hour	-		-	0.5 ppm (1300 µg/m ³)	
	24-Hour	0.04 ppm (105 µg/m ³)		0.14 ppm (365 µg/m ³) (for certain areas) ⁹	-	
	Annual Arithmetic Mean	-		0.030 ppm (80 µg/m ³) (for certain areas) ⁹	-	
Lead ^{11,12}	30-Day Average	1.5 µg/m ³	Atomic Absorption	-	-	High Volume Sampler and Atomic Absorption
	Calendar Quarter	-		1.5 µg/m ³	Same as Primary Standard	
	Rolling 3-Month Average	-		0.15 µg/m ³		
Visibility Reducing Particles ¹³	8-Hour	See footnote 12	Beta Attenuation and Transmittance through Filter Tape	No Federal Standards		
Sulfates	24-Hour	25 µg/m ³	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence			
Vinyl Chloride ¹¹	24-Hour	0.01 ppm (26 µg/m ³)	Gas Chromatography			

Notes for Table 1:

- ¹ California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, suspended particulate matter—PM₁₀, PM_{2.5}, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
- ² National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact USEPA for further clarification and current federal policies.
- ³ Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- ⁴ Any equivalent procedure which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.
- ⁵ National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- ⁶ National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- ⁷ Reference method as described by the USEPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the USEPA.
- ⁸ On December 14, 2012, the national annual PM_{2.5} primary standard was lowered from 15 µg/m³ to 12.0 µg/m³. The existing national 24-hour PM_{2.5} standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15 µg/m³. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 µg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
- ⁹ To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 and 0.100 ppm, respectively.
- ¹⁰ On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-hour average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ 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 have been approved.
- ¹¹ The CARB has identified lead and vinyl chloride as ‘toxic air contaminants’ with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
- ¹² The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
- ¹³ In 1989, the CARB converted both the general statewide 10-mile visibility standards and the Lake Tahoe 20-mile visibility standard to instrumental equivalents, which are “extinction of 0.23 per kilometer” and “extinction of 0.07 per kilometer” for the statewide and Lake Tahoe Air Basin standards, respectively.

ppm = parts per million; µg/m³ = micrograms per cubic meter;
 mg/m³ = milligrams per cubic meter
 Source: CARB June 4, 2013

Each nonattainment area must submit a “State Implementation Plan” (SIP) outlining the combination of local, state, and federal actions and emission control regulations necessary to bring the area into attainment as expeditiously as practicable. Then, even after the nonattainment area attains the air quality standard, it will remain designated a nonattainment area unless and until the state submits to USEPA a formal request for redesignation to attainment. The request must include a “maintenance” plan demonstrating that the area will maintain compliance with

that NAAQS for at least 10 years after USEPA redesignates the area to attainment. A brief summary of the redesignation request and maintenance plan is provided below (SDAPCD 2012).

1-Hour Ozone Standard. San Diego County was designated nonattainment for the 1-hour ozone standard on March 3, 1978. The region attained the 1-hour ozone standard in 2001, based on 1999-2001 air quality data. The District prepared and ARB submitted to USEPA a redesignation request and maintenance plan in 2002, and USEPA redesignated San Diego County to attainment for the 1-hour ozone standard on July 28, 2003. USEPA subsequently revoked the 1-hour ozone standard on June 15, 2005, after issuing area designations for the more health-protective 1997 8-hour ozone NAAQS. However, the USEPA-approved 1-hour ozone Maintenance Plan remains in effect as the applicable ozone SIP until USEPA approves a subsequent ozone SIP submittal (i.e., the Maintenance Plan herein) (SDAPCD 2012).

1997 8-Hour Ozone Standard. The region was designated nonattainment for the 1997 8-hour ozone NAAQS, effective June 15, 2004, based on ozone air quality measurements over the 2001-2003 three-year period. On December 05, 2012, the SDAPCD adopted its *Ozone Redesignation Request and Maintenance Plan*, which calls for the SDAB to attain the 1997 federal 8-hour ozone NAAQS, with a request for redesignation to attainment/maintenance area. On December 6, 2012, the CARB approved the *Redesignation Request and Maintenance Plan for the 1997 National Ozone Standard for San Diego County* for submittal to the USEPA as a SIP revision. On December 20, 2012, the USEPA initiated its adequacy review of the plan and posted the document for a 30-day public review period that closed January 22, 2013. On March 25, 2013, the USEPA approved the redesignation to the 1997 8-hour ozone attainment/maintenance plan. Redesignation to attainment of the 1997 standard does not affect the region's marginal nonattainment status for the 2008 standard (SDAPCD 2012).

2008 8-Hour Ozone Standard. The USEPA approved stricter standards for ozone that became effective in 2008. On May 21, 2012, the USEPA designated the SDAB as a non-attainment area for the new 2008 Eight-Hour Ozone standard based on 2009-2011 ozone data and classified it as a marginal area with an attainment date of December 31, 2015. This designation became effective on July 20, 2012.

The CARB is the state regulatory agency with authority to enforce regulations to both achieve and maintain the NAAQS and CAAQS. The CARB is responsible for the development, adoption, and enforcement of the state's motor vehicle emissions program, as well as the adoption of the CAAQS. The CARB also reviews operations and programs of the local air districts, and requires each air district with jurisdiction over a nonattainment area to develop its own strategy for achieving the NAAQS and CAAQS. The local air district has the primary responsibility for the development and implementation of rules and regulations designed to attain the NAAQS and CAAQS, as well as the permitting of new or modified sources, development of air quality management plans, and adoption and enforcement of air pollution regulations. The SDAPCD is the local agency responsible for the administration and enforcement of air quality regulations for San Diego County.

The SDAPCD and San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient

air quality standards in the SDAB. The San Diego County Regional Air Quality Strategy (RAQS) was initially adopted in 1991, and is updated on a triennial basis. The RAQS was initially adopted by the SDAPCD on June 30, 1992, and amended on March 2, 1993, in response to CARB comments. SDAPCD further updated the RAQS Revisions on December 12, 1995; June 17, 1998; August 8, 2001; July 28, 2004; and April 22, 2009. The local RAQS, in combination with those from all other California nonattainment areas with serious (or worse) air quality problems, is submitted to the CARB, which develops the California SIP. The SDAPCD has developed its input to the SIP, which includes the SDAPCD's plans and control measures for attaining the ozone NAAQS. SDAPCD submitted an air quality plan to USEPA in 2007; the plan demonstrated how the 8-hour ozone standard would be attained by 2009. Despite best efforts, SDAB did not meet the ozone NAAQS in 2008 and 2009, SDAPCD is currently revising their air quality plan. These plans accommodate emissions from all sources, including natural sources, through implementation of control measures, where feasible, on stationary sources to attain the standards. Mobile sources are regulated by the USEPA and the CARB, and the emissions and reduction strategies related to mobile sources are considered in the RAQS and SIP.

The RAQS relies on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in the County, to project future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. The CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and by the County as part of the development of the County's General Plan. As such, projects that propose development that is consistent with the growth anticipated by the general plans would be consistent with the RAQS. In the event that a project would propose development that is less dense than anticipated within the general plan, the project would likewise be consistent with the RAQS. If a project proposes development that is greater than that anticipated in the general plan and SANDAG's growth projections, the project might be in conflict with the RAQS and SIP, and might have a potentially significant impact on air quality.

The SIP relies on the same information from SANDAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin. The SIP also includes rules and regulations that have been adopted by the SDAPCD to control emissions from stationary sources. These SIP-approved rules may be used as a guideline to determine whether a project's emissions would have the potential to conflict with the SIP and thereby hinder attainment of the NAAQS for ozone.

Table 1 presents a summary of the ambient air quality standards adopted by the federal and California CAAs. The current attainment status (Table 2) for San Diego County is as follows:

Table 2 FEDERAL AND STATE AIR QUALITY DESIGNATION		
Criteria Pollutant	Federal Designation	State Designation
O ₃ (1-hour)	(No federal standard)	Nonattainment
O ₃ (8-hour)	Nonattainment	Nonattainment
CO	Maintenance	Attainment
PM ₁₀	Unclassifiable	Nonattainment
PM _{2.5}	Attainment	Nonattainment
NO ₂	Attainment	Attainment
SO ₂	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen Sulfide	(No federal standard)	Unclassifiable
Visibility	(No federal standard)	Unclassifiable

Source: SDAPCD 2012a and USEPA 2012a

2.4 Background Air Quality

The SDAPCD operates a network of ambient air monitoring stations throughout the County. The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. There is no ambient monitoring station in the nearby areas of the Project site. The nearest ambient monitoring stations to the Project site are the Escondido East Valley Parkway station and the San Diego 12th Avenue station (which is the closest station that measures SO₂). Because both the Escondido and San Diego 12th Avenue monitoring stations are located in areas where there is substantial traffic congestion, it is likely that pollutant concentrations measured at those monitoring stations are higher than concentrations that would be observed or measured in the Project area, and would thus provide a conservative estimate of background ambient air quality.

In particular, concentrations of CO at the Escondido monitoring station tend to be among the highest in the SDAB, due to the fact that the monitor is located along East Valley Parkway in a congested area in downtown Escondido. The station sees higher concentrations of CO than have historically been measured elsewhere in San Diego County and the background data are not likely to be representative of background ambient CO concentrations at the Project site, due to the site's location in a less developed area.

Ambient concentrations of pollutants over the last 5 years are presented in Table 3. Air quality has shown improvement in the SDAB such that the 1-hour state ozone standard was not exceeded in 2007 or 2009, but was exceeded nine times in 2008, two times in 2010, and one time in 2011 at the Escondido monitoring station during the period from 2007 through 2011. The 8-hour state ozone standard was exceeded five times in 2007, 23 times in 2008, nine times in 2009, five times in 2010, and two times in 2011. The federal 8-hour ozone standard was exceeded at the Escondido monitoring station three times in 2007, thirteen times in 2008, one time in 2009, three times in 2010, and two times in 2011. The federal 24-hour PM_{2.5} standard was exceeded 11 times in 2007, 3 times in 2008, 2 times in both 2009 and 2010, and three times

in 2011. The Escondido monitoring station measured exceedances of the state 24-hour PM₁₀ standard two times in 2007, and one time in both 2008 and 2009. The annual PM₁₀ and PM_{2.5} standards were exceed in most years. The data from the monitoring stations indicate that air quality is in attainment of all other federal and state NO₂, CO and SO₂ standards.

Table 3
AMBIENT BACKGROUND CONCENTRATIONS
SAN DIEGO MONITORING STATIONS

Air Pollutant	2007	2008	2009	2010	2011
Ozone – Escondido East Valley Parkway					
Max 1 Hour (ppm)	0.094	0.116	0.093	0.105	0.098
Days > CAAQS (0.09 ppm)	0	9	0	2	1
Max 8 Hour (ppm)	0.077	0.098	0.080	0.084	0.089
Days > NAAQS (0.075 ppm)	3	13	1	3	2
Days > CAAQS (0.070 ppm)	5	23	9	5	2
Particulate Matter (PM₁₀) – Escondido East Valley Parkway					
Max Daily (µg/m ³)	68.0	82.0	73	42	40
Days > NAAQS (150 µg/m ³)	0	0	0	0	0
Days > CAAQS (50 µg/m ³)	2	1	1	0	0
Highest Annual Average (µg/m ³)	26.7	24.6	24.9	20.9	18.8
Exceed CAAQS (20 µg/m ³)	1	1	1	1	0
Particulate Matter (PM_{2.5}) – Escondido East Valley Parkway					
Max Daily (µg/m ³)	126.2	44.0	64.9	48.4	67.7
Days > NAAQS (35 µg/m ³)	11	3	2	2	3
Highest Annual Average (µg/m ³)	13.3	12.4	13.4	12.2	12.2
Exceed NAAQS (15 µg/m ³)	0	0	0	0	0
Exceed CAAQS (12 µg/m ³)	1	1	1	1	1
Nitrogen Dioxide (NO₂) – Escondido East Valley Parkway					
Max 1 Hour (ppm)	0.072	0.081	0.073	0.064	0.062
Days > NAAQS (0.10 ppm)	0	0	0	0	0
Days > CAAQS (0.18 ppm)	0	0	0	0	0
Highest Annual Average (ppm)	0.016	0.018	0.016	0.014	0.013
Exceed NAAQS (0.053 ppm)	0	0	0	0	0
Exceed CAAQS (0.030 ppm)	0	0	0	0	0
Carbon Monoxide (CO) – Escondido East Valley Parkway					
Max 8 Hour (ppm)	3.19	2.81	3.24	2.46	2.20
Days > NAAQS (9 ppm)	0	0	0	0	0
Days > CAAQS (9.0 ppm)	0	0	0	0	0
Max 1 Hour (ppm)	5.2	5.6	4.4	3.9	3.5
Days > NAAQS (35 ppm)	0	0	0	0	0
Days > CAAQS (20 ppm)	0	0	0	0	0
Sulfur Dioxide (SO₂) – Downtown San Diego Beardsley Street					
Max Daily Measurement (ppm)	0.006	0.007	0.006	0.002	0.003
Days > NAAQS (0.14 ppm)	0	0	0	0	0
Days > CAAQS (0.04 ppm)	0	0	0	0	0

Source: CARB 2012b www.arb.ca.gov (all pollutants except 1-hour CO)

USEPA 2012b <http://www.epa.gov/airdata/> (1-hour CO)

Abbreviations: > = exceed; ppm = parts per million; µg/m³ = micrograms per cubic meter; CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; Mean = Annual Arithmetic Mean

* No Data / Insufficient Data

3.0 SIGNIFICANCE CRITERIA AND ANALYSIS METHODOLOGIES

3.1 Significance Criteria

The County (2007) has approved guidelines for determining significance based on Appendix G.III of the State California Environmental Quality Act (CEQA) Guidelines, which provide guidance that a project would have a significant environmental impact if it would:

1. Conflict with or obstruct the implementation of the San Diego RAQS or applicable portions of the SIP;
2. Result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation;
 - a. Result in emissions that exceed 250 pounds per day of NO_x, or 75 pounds per day of VOCs.
 - b. Result in emissions of carbon monoxide of 550 pounds per day, and when totaled with the ambient concentrations will exceed a 1-hour concentration of 20 parts per million (ppm) or an 8-hour average of 9 ppm.
 - c. Result in emissions of PM_{2.5} that exceed 55 pounds per day.
 - d. Result in emissions of PM₁₀ that exceed 100 pounds per day and increase the ambient PM₁₀ concentration by 5 micrograms per cubic meter (5.0 µg/m³) or greater at the maximum exposed individual.
3. Result in a cumulatively considerable net increase of PM₁₀ or exceed quantitative thresholds for ozone precursors, NO_x and VOCs;
4. Expose sensitive receptors (including, but not limited to, residences, schools, hospitals, resident care facilities, or day-care centers) to substantial pollutant concentrations;
 - a. Place sensitive receptors near CO “hot spot” or create CO “hot spot” near sensitive receptors.
 - b. Result in exposure to TACs resulting in a maximum incremental cancer risk greater than 1 in 1 million without application of Toxics-Best Available Control Technology or a health HI greater than 1 would be deemed as having a potentially significant impact.
5. Create objectionable odors affecting a substantial number of people.

The County recognizes the SDAPCD’s established screening level thresholds for air quality emissions (Rules 20.1 *et seq.*) for land development projects. As stated above, projects that propose development that is consistent with the growth anticipated by the general plans and SANDAG’s growth forecasts would be consistent with the RAQS and SIP. Also, projects that are consistent with the SIP rules (i.e., the federally-approved rules and regulations adopted by the SDAPCD) are consistent with the SIP. Thus, projects would be required to conform with

measures adopted in the RAQS (including use of low-VOC architectural coatings, use of low-NO_x water heaters, and compliance with rules and regulations governing stationary sources) and would also be required to comply with all applicable rules and regulations adopted by the SDAPCD.

To determine whether a project would (a) result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation, or (b) result in a cumulatively considerable net increase of PM₁₀ or exceed quantitative thresholds for ozone precursors, oxides of NO_x and VOCs, project emissions may be evaluated based on the quantitative emission thresholds established by the SDAPCD. As part of its air quality permitting process, the SDAPCD has established thresholds in Rule 20.2 for the preparation of Air Quality Impact Assessments (AQIAs). The County has also adopted the SCAQMD's screening threshold of 55 pounds per day or 10 tons per year as a significance threshold for PM_{2.5}.

For CEQA purposes, these screening criteria can be used as numeric methods to demonstrate that a project's total emissions would not result in a significant impact to air quality. The screening thresholds are included in Table 4.

Table 4 SCREENING-LEVEL THRESHOLDS FOR AIR QUALITY IMPACT ANALYSIS			
Pollutant	Total Emissions		
Construction Emissions			
	Pounds per Day		
Respirable Particulate Matter (PM ₁₀)	100		
Fine Particulate Matter (PM _{2.5})	55		
Oxides of Nitrogen (NO _x)	250		
Oxides of Sulfur (SO _x)	250		
Carbon Monoxide (CO)	550		
Volatile Organic Compounds (VOCs)	75		
Operational Emissions			
	Pounds Per Hour	Pounds per Day	Tons per Year
Respirable Particulate Matter (PM ₁₀)	---	100	15
Fine Particulate Matter (PM _{2.5})	---	55	10
Oxides of Nitrogen (NO _x)	25	250	40
Oxides of Sulfur (SO _x)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	---	3.2	0.6
Volatile Organic Compounds (VOC)	---	75	13.7
Toxic Air Contaminant Emissions			
Excess Cancer Risk	1 in 1 million 10 in 1 million with T-BACT		
Non-Cancer Hazard	1.0		

Source: SDAPCD Rule 20.2 and Rule 1210.

T-BACT = Toxics Best Available Control Technology

In the event that emissions exceed these screening-level thresholds, modeling would be required to demonstrate that the Project's total air quality impacts result in ground-level concentrations that are below the NAAQS and CAAQS, including appropriate background levels. For nonattainment pollutants (ozone [with ozone precursors NO_x and VOCs], PM_{2.5} and PM₁₀), if emissions exceed the thresholds shown in Table 3, the Project could have the potential to result in a cumulatively considerable net increase in these pollutants and thus could have a significant impact on the ambient air quality.

In addition to impacts from criteria pollutants, impacts may include emissions of pollutants identified by the state and federal government as TACs or Hazardous Air Pollutants (HAPs). In San Diego County, the Planning and Development Services (PDS) identifies an excess cancer risk level of 1 in 1 million or less for projects that do not implement Toxics Best Available Control Technology (T-BACT), and an excess cancer risk level of 10 in 1 million or less for projects that do implement T-BACT. The significance threshold for non-cancer health effects is a health HI of 1 or less. These significance thresholds are consistent with the SDAPCD's Rule 1210 requirements for stationary sources. If a project has the potential to result in emissions of any TAC or HAP which result in a cancer risk of greater than 1 in 1 million without T-BACT, 10 in 1 million with T-BACT, or a health HI of 1 or more, the project would be deemed to have a potentially significant impact.

With regard to evaluating whether a project would have a significant impact on sensitive receptors, air quality regulators typically define sensitive receptors as schools (Preschool through 12th Grade), hospitals, residences, resident care facilities, or day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. Based on Bay Area Air Quality Management District (BAAQMD) guidance, any project that has the potential to directly impact a sensitive receptor located within 1,000 feet and results in a health risk greater than the risk significance thresholds discussed above would be deemed to have a potentially significant impact (BAAQMD 2012).

Section 6318 of the County Zoning Ordinance requires all commercial and industrial uses "be operated as not to emit matter causing unpleasant odors which is perceptible by the average person at or beyond any lot line of the lot containing said uses." SDAPCD Rule 51 (Public Nuisance) also prohibits emission of any material causing nuisance to a considerable number of persons or endangers the comfort, health or safety of any person. A project that proposes a use that would produce objectionable odors would be deemed to have a significant odor impact if it would affect a considerable number of receptors.

The impacts associated with construction and operation of the Project were evaluated for significance based on these significance criteria.

3.2 Methodology

The Project would generate construction-related emissions and operational emissions. The methods used to evaluate construction and operational impacts are described below.

Construction of the Project would result in the temporary generation of emissions of VOC, NO_x, CO, SO_x, PM₁₀ and PM_{2.5}. Construction-related emissions would vary substantially depending on the level of activity, length of the construction period, specific construction operations, types of equipment, number of personnel, wind and precipitation conditions, and soil moisture content. It is assumed that most of the construction equipment used would be diesel-powered. The construction activities associated with the Project would create diesel particulate matter (DPM) emissions, and would generate fugitive dust. Construction equipment within the Project site that would generate criteria air pollutants could include backhoe, cranes, dozers, excavator, loaders, scrapers, and haul trucks. Some of this equipment would be used during site preparation and grading activities as well as when structures are constructed on the Project site. In addition, emissions during construction and grading activities include truck trips off site to remove debris during the blasting phase and construction truck trips.

Criteria pollutant and O₃ precursor emissions for Project construction activities were calculated using the California Emission Estimator Model (CalEEMod) Version 2013.2.2 computer program as recommended by the County. CalEEMod incorporates CARB's EMFAC2011 model for on-road vehicle emissions and the OFFROAD2011 model for off-road vehicle emissions. CalEEMod is designed to model construction emissions for land development projects and allows for the input of project-specific information, such as the number of equipment, hours of operations, duration of construction activities, and selection of emission control measures. The CalEEMod calculations were supplemented by manual calculations where the limitations of the CalEEMod program prevent appropriate representation of a construction activity, such as rock blasting.

Project-generated, long-term regional area-source and mobile-source emissions of criteria air pollutants and O₃ precursors were also modeled using CalEEMod. CalEEMod allows land use selections that include project land use types, sizes, and metric specifics and trip generation rates. Figure 4 presents the Neighborhood Layout Plan. Table 5 presents a summary of the land uses data input values for CalEEMod. Area sources include the combustion of natural gas for heating and hot water, engine emissions from landscape maintenance equipment, and VOC emissions from repainting of buildings. CalEEMod also accounts for mobile source emissions associated with vehicle trip generation. Project-specific input was based on general information provided in the Project description, the Traffic Impact Analysis (TIA) prepared for this Project (LLG 2015), assumptions as described in Section 4.2 below, and default CalEEMod settings for San Diego County in order to estimate reasonable worst-case conditions. Model output data sheets and calculations are included in Appendices A and C.

Table 5 LIST OF LAND USE, SIZE, AND METRIC USED AS INPUTS FOR PROPOSED PROJECT TO CALEEMOD/ROAD CONSTRUCTION MODELS		
Land Uses	Size	Metric
Off-site Access Roads	5,162	Linear Feet
Single-Family Residential (N 1& 5)	165	Dwelling Units
General Light Industrial	21,600	Square Feet
Single-Family Residential (N 2)	58	Dwelling Units
Single-Family Residential (N 3)	35	Dwelling Units
Single-Family Residential (N 4)	76	Dwelling Units

Note: N = Neighborhood

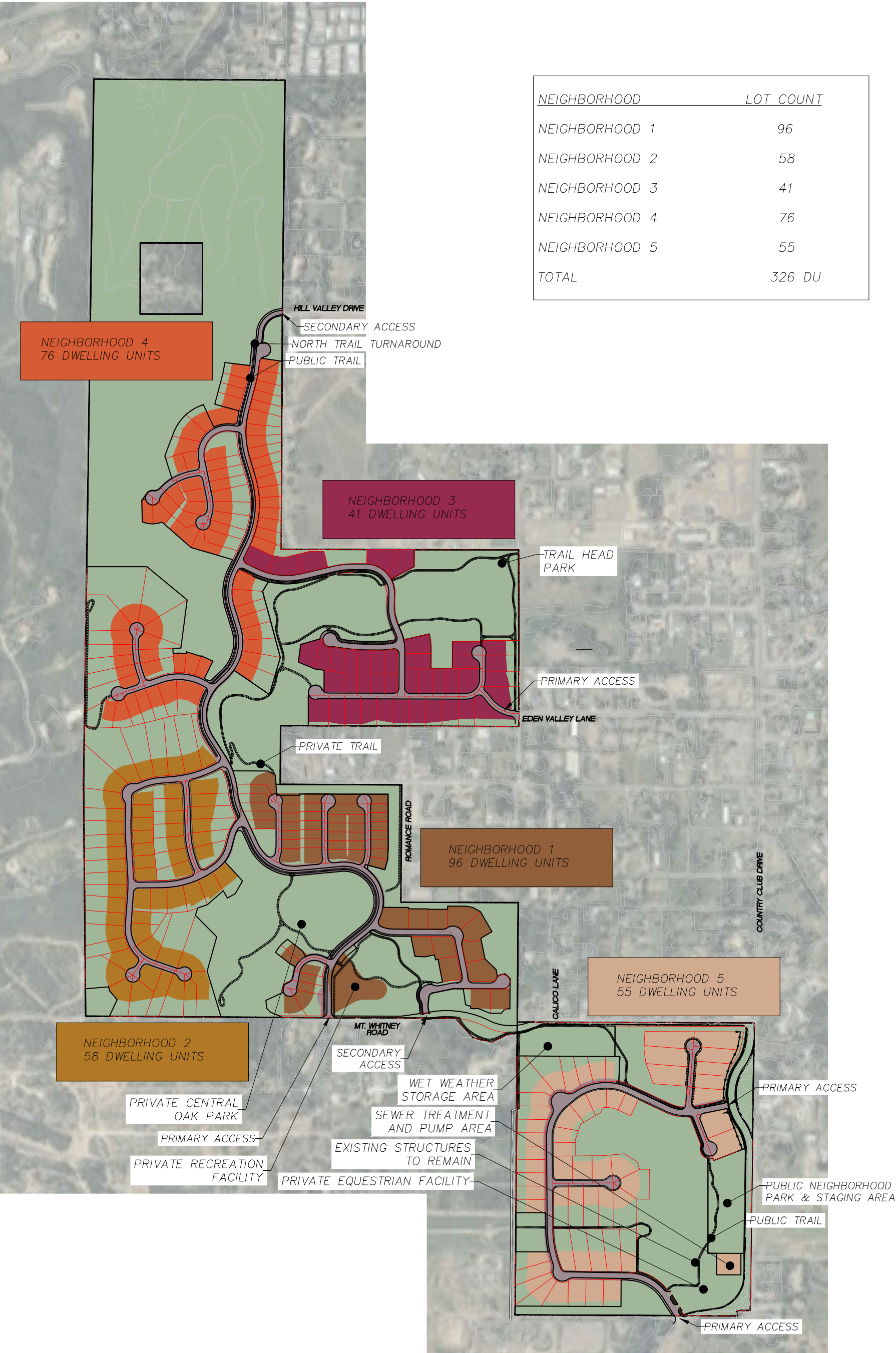
Location of Off-site Sensitive Receptors. Air quality regulators typically define “sensitive receptors” as schools, hospitals, resident care facilities, day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. However, for the purpose of CEQA analysis, the County definition of “sensitive receptors” also includes residences (County 2007). Existing sensitive receptors within one quarter mile of the Project vicinity include several existing residences within 100 feet to the west, within 250 feet to the northeast, within 100 feet to the east, and within 100 feet to the southeast. There are no schools, hospitals, or other non-residence sensitive receptors within one quarter mile of the Project site.

Figure 5 presents the location of sensitive receptors within 0.25-miles of the Project site. The two primary emissions of concern for impacts to sensitive receptors are CO and DPM.

Carbon Monoxide Impacts at Congested Intersections. Under the Cumulative Impact Section, localized increases in CO concentrations from vehicle congestion at intersections affected by development were modeled using the California Department of Transportation (Caltrans) California Line Source Dispersion Model (Version 4) (CALINE4) line source dispersion model (Benson 1989). CO concentrations at intersections with level of service (LOS) E or F near the vicinity of the Project site were estimated using CALINE4. LOS is a measure of traffic delay, rated A-F, with F indicating the worst delay.

Health Risks from Diesel Particulate Matter and Volatile Organic Compounds. To evaluate whether Project construction activities and WTWRF could pose a significant impact to nearby sensitive receptors, a health risk evaluation of diesel PM and VOCs were conducted using the USEPA SCREEN3 model. The risks associated with exposure to substances with carcinogenic effects are typically evaluated based on a lifetime of chronic exposure, which is defined in the California Office of Environmental Health Hazard Assessment (OEHHA) guidelines, *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, as 24 hours per day, 7 days per week, 365 days per year, for 70 years. Diesel exhaust particulate matter would be emitted during construction due to the operation of heavy equipment at the site. TACs would be generated during treatment of the influent at the WTWRF. Most TAC emissions would be produced during degradation or reaction while in the treatment system. Organic compounds would volatilize from the liquid surface of the reactors during the biological

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Source: Fuscoe Engineering 2015

Neighborhood Layout

VALIANO



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Location of Sensitive Receptors

treatment of influent. The USEPA's approved air dispersion model, SCREEN3, was used to estimate the downwind impacts at the closest receptors to the construction sites and WTWRF. The model was run using worst case meteorological conditions. Risks were estimated using the OEHHA unit risk factor for diesel PM and volatile compounds, which is an upper-bound cancer risk estimate based on 70 years of exposure. Because the unit risk factor is based on 70 years (25,550 days) of exposure for 24 hours per day, 365 days per year, the diesel PM results of the analysis were scaled down to four years to account for exposure for the duration of the total construction duration period. The chronic and acute results for the WTWRF are based on the annual and 24-hour average exposure periods. Further details relative to the health risk methodology are included in Appendices E and F.

4.0 PROJECT IMPACT ANALYSIS

The Project would result in both construction and operational emissions. Construction emissions include short-term emissions associated with mass grading, infrastructure installation and structure development from the Project. Operational emissions include long-term emissions associated with the Project, including energy usage and traffic, at full Project buildout.

4.1 Conformance to the Regional Air Quality Strategy

4.1.1 Issue Background

The RAQS outlines SDAPCD's plans and control measures designed to attain the CAAQS for ozone. In addition, the SDAPCD relies on the SIP, which includes the SDAPCD's plans and control measures for attaining the ozone NAAQS. These plans accommodate emissions from all sources, including natural sources, through implementation of control measures, where feasible, on stationary sources to attain the standards. Mobile sources are regulated by the USEPA and the CARB, and the emissions and reduction strategies related to mobile sources are considered in the RAQS and SIP.

The RAQS relies on information from CARB and SANDAG, including projected growth in the County, mobile, area and all other source emissions in order to project future emissions and determine from that the strategies necessary for the reduction of stationary source emissions through regulatory controls. The CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and by the County. As such, projects that propose development that is consistent with the growth anticipated by the general plans would be consistent with the RAQS. In the event that a project proposes development which is less dense than anticipated within the General Plan, the project would likewise be consistent with the RAQS. If a project proposes development that is greater than that anticipated in the County General Plan and SANDAG's growth projections upon which the RAQS is based, the project would be in conflict with the RAQS and SIP, and might have a potentially significant impact on air quality. This situation would warrant further analysis to determine if the Project and the surrounding projects exceed the growth projections used in the RAQS for the specific subregional area.

4.1.2 Significance of Impacts Prior to Mitigation

The Project involves a Specific Plan and General Plan Amendment, and is proposing more intense residential development than accounted for in the General Plan, and therefore, the 2009 RAQS. The Project is located in the North County East Major Statistical Area, in the San Marcos and Escondido Subregional Areas. The current 2009 RAQS are based on projections for residential, commercial, industrial and recreational land uses contained in the County's previous General Plan (prior to 2011) that was in place at the time the RAQS were adopted in 2009. It should be noted that population and vehicle miles traveled (VMT) growth projections in SANDAG's 2030 Regional Transportation Plan was used in the 2009 RAQS. In relation to the residential developments, the General Plan and 2030 RTP projected lower population (i.e., number of residences) at buildout than the Project. Implementation of the

Project would result in greater residential DUs and in the unincorporated area of the County than assumed in the General Plan and 2030 RTP.

The RAQS outlines SDAPCD's plans and control measures designed to attain the state air quality standards for ozone. The RAQS relies on SANDAG growth projections based on population, vehicle trends, and land use plans developed by the cities and by the county as part of the development of their general plans and specific plans.

For the Project, the total number of DUs for residential land uses is proposed to increase from 118 to 334 units. While potential conflicts with the RAQS may occur when a proposed development, such as Valiano, seeks to increase the number of units which were in effect at the time the RAQS were formulated, the effect on anticipated population is also important. With respect to this second factor, it is important to note that the population of San Diego County has not reached the maximum level assumed by the latest version of the RAQS (2009). The 2030 RTP, which was adopted in 2009 (the same year when the RAQS were last updated), predicted a population for the year 2010 of 3,245,279 in San Diego County. However, according to the California Department of Finance, the population of San Diego County as of July 1, 2011 was 3,131,254. The additional 216 residential units proposed by the Project would result in an increase of 594 residents to the County, which could be accommodated within the 114,025-person surplus between projected and actual population growth.

The total cumulative housing projected for the San Marcos and Escondido Subregional Areas for 2030, according to SANDAG projections used for the 2030 RTP, is an additional 38,160 DUs. The Project's projected growth of net increase 216 DUs, when added to the cumulative housing units projected for the San Marcos and Escondido Subregional Areas (based on the cumulative projects identified in the Valiano TIA (LLG 2015), totals 567 DUs, which is below SANDAG's 2030 projected growth for the North County East Major Statistical Area of 54,251 DUs, and less than SANDAG's 2030 projected growth of 38,160 dwelling units for the San Marcos and Escondido Subregional Areas.

The current population and housing in San Diego County are lower than what was projected for the region, and therefore it is unlikely that the additional units from the Project would interfere with the SDAPCD's goals for improving air quality in the SDAB. However, because the Project is proposing an increase in housing units beyond what was included for the site in the 2009 RAQS, impacts associated with conformance to regional air quality plans would be potentially significant.

4.1.3 Mitigation Measures and Design Considerations

The Project would be developed to include smart growth concepts which clusters residential uses around services and jobs such as the nearby Palomar Medical Hospital, Palomar Power Plant, Stone Brewery, and other variety of manufacturing, retail, and office business park at approximately within one mile in travel distance, which in return helps to reduce the average VMT for the average commuter. General Plan, Goal COS-13 regarding land use development implements policies is designed to reduce emissions of criteria pollutants while protecting public health (County 2011a). These policies include the following:

COS-13.1 Design and Construction of New Development. Require new development design and construction methods to minimize impacts to air quality.

COS-13.4 Minimize Air Pollution. Minimize land use conflicts that expose people to significant amounts of air pollution.

The CalEEMod modeling analysis was conducted using conservative approach and would include features such as a variety of energy-efficient building materials, solar ready roofs, and energy star appliances. Because the Project addresses several RAQS control measures and the General Plan goals that are relevant to the Project site, there are no additional measures available.

4.1.4 Conclusions

The Proposed Project would not conform with the RAQS and SIP and would result in a significant and unavoidable impact.

4.2 Conformance to Federal and State Ambient Air Quality Standards

4.2.1 Construction Impacts

Issue Background

Based on the County Guidelines (2007), construction impacts would be potentially significant if they exceed the quantitative screening-level thresholds for attainment/maintenance pollutants (NO₂, SO₂, and CO), and would result in a significant impact if they exceed the screening-level thresholds for nonattainment pollutants (ozone precursors and particulate matter).

4.2.1.1 Guidelines for the Determination of Significance

Would the project construction result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation?

The SDAPCD does not provide quantitative thresholds for determining the significance of construction or mobile source-related impacts. However, the SDAPCD does specify AQIA trigger levels for new or modified stationary sources (SDAPCD Rules 20.2 and 20.3). If these incremental levels for stationary sources are exceeded, an AQIA must be performed for the proposed new or modified source. Although these trigger levels do not generally apply to mobile sources or general land development projects, for comparative purposes these levels may be used to evaluate the increased emissions that would be discharged to the SDAB from proposed land development projects.

SDAPCD Rule 20.2, which outlines these significance level thresholds (SLT), states that any project “which results in an emissions increase equal to or greater than any of these levels, must:

demonstrate through an AQIA... that the project will not (A) cause a violation of a State or national ambient air quality standard anywhere that does not already exceed such standard, nor (B) cause additional violations of a national ambient air quality standard anywhere the standard is already being exceeded, nor (C) cause additional violations of a State ambient air quality standard anywhere the standard is already being exceeded, nor (D) prevent or interfere with the attainment or maintenance of any State or national ambient air quality standard.”

For projects whose stationary source emissions are below these criteria, no AQIA is typically required, and project-level emissions are presumed to be less than significant.

For CEQA purposes, these SLTs can be used to demonstrate that a project’s total emissions (e.g., stationary and fugitive emissions, as well as emissions from mobile sources) would not result in a significant impact to air quality. When project emissions have the potential to approach or exceed the SLTs, additional air quality modeling may need to be prepared to demonstrate that ground-level concentrations resulting from project emissions (with background levels) would be below federal and state ambient air quality standards listed in Table 6.

SDAPCD Rules 20.2 and 20.3 do not have AQIA thresholds for emissions of VOCs and PM_{2.5}. The use of the screening level for VOCs specified by the South Coast Air Quality Management District (SCAQMD), which generally has stricter emissions thresholds than SDAPCD’s, is recommended for evaluating projects in San Diego County.

In the event that Project emissions exceed these SLTs, specific modeling would be required for NO₂, SO₂, CO, and lead to demonstrate that the project’s ground-level concentrations, including appropriate background levels, do not exceed the NAAQS and CAAQS. For ozone precursors, PM₁₀ and PM_{2.5}, exceedance of the SLTs results in a significant impact. The reason for this is that the SDAB is currently not in attainment for PM₁₀, PM_{2.5}, and ground-level ozone. Therefore, unless a project includes design considerations or mitigation measures that would reduce the daily emissions to below the applicable screening levels, the impact for these pollutants (ozone precursors, PM₁₀, and PM_{2.5}) would be significant, as discussed below.

Ozone Precursors

- Would the project result in emissions that exceed 250 pounds per day of NO_x, or 75 pounds per day of VOCs?

Carbon Monoxide

- Would the project result in emissions that exceed 550 pounds per day of CO, and when totaled with the ambient concentrations exceed a 1-hour concentration of 20 ppm or an 8-hour average of 9 ppm?

Particulate Matter

- Would the project result in emissions of PM_{2.5} that exceed 55 pounds per day?

- Would the project result in emissions of PM₁₀ that exceed 100 pounds per day and increase the ambient PM₁₀ concentration by 5.0 µg/m³ or greater at any sensitive receptor locations (or maximum exposed individual (MEI), a term commonly used by CARB for sensitive receptors)?

The ambient air quality standards reflect actual concentrations for each criteria pollutant. However, it is not economically feasible for individual land use projects to model actual concentrations for ozone based on emissions of its precursors due to the complex regional nature of ozone formation in the atmosphere. Therefore, exceedance of the SLTs for NO_x and VOCs would result in a significant impact unless mitigation is incorporated that would reduce the emissions of these pollutants below the level of the screening thresholds.

4.2.1.2 Significance of Impacts Prior to Mitigation

The construction activities associated with the Project would create diesel emissions, and would generate emissions of dust. In general, emissions from diesel-powered equipment contain more NO_x, oxides of sulfur (SO_x), and particulate matter than gasoline-powered engines. However, diesel-powered engines generally produce less CO and less reactive organic gases than do gasoline-powered engines. Standard construction equipment includes dozers, rollers, scrapers, backhoes, loaders, paving equipment, delivery/haul trucks, and so on. Emissions associated with construction of the Project were calculated using the CalEEMod computer program assuming that construction duration period would begin in January 2016 and last until mid-2019.

Construction Phasing

For the purpose of the analysis, Project construction is broken down into three main construction phases, with five individual neighborhoods to be constructed separately (with the exception of Neighborhoods 1 and 5, which would be constructed together). The first phase focuses on overall site grading and rock blasting, which would begin in 2016 and last approximately two years. The second phase would be the infrastructure installation, which includes the construction of the WTWRF, utility connections, and roadways. The infrastructure phase would last approximately one year. The third phase addresses “vertical” development of the Project, which includes constructing the residential buildings and coating the pavement/architecture, which would take approximately 2.5 years.

Table 6 presents the anticipated construction schedule that was generated by CalEEMod model to calculate the daily emissions. Default values were used for the number of work days per week and total length of days per year based on the size of the development. For the Roadway Construction Model, the duration of construction activity was assumed to occur in three months. CalEEMod construction emission calculations are provided in Appendix A and roadway construction emissions are provided in Appendix B.

Table 6
ANTICIPATED CONSTRUCTION SCHEDULE

Component	Construction Activity	Construction Period		
		Start	End	Number of Working Days
Phase 1 – Grading and Blasting				
Neighborhoods 1 & 5	Site Prep	1/5/2016	2/13/2016	30
	Grading	2/16/2016	5/29/2016	75
Neighborhood 2	Site Prep	6/27/2016	7/10/2016	10
	Grading	7/11/2016	8/21/2016	30
	Drilling and Blasting	7/11/2016	8/21/2016	30
Neighborhood 3	Site Prep	1/2/2017	1/15/2017	10
	Grading	1/16/2017	3/4/2017	35
	Drilling and Blasting	1/16/2017	2/26/2017	30
Neighborhood 4	Site Prep	7/4/2017	7/29/2017	20
	Grading	8/1/2017	9/30/2017	45
	Drilling and Blasting	8/1/2017	9/9/2017	30
Phase 2 – Infrastructure, Road Construction and WTWRF Installation				
Neighborhoods 1 & 5	Backbone Infrastructure	7/6/2016	11/2/2016	86
Wastewater	Demolition	7/6/2016	7/19/2016	10
	Site Preparation	7/20/2016	7/20/2016	1
	Grading	7/21/2016	7/22/2016	2
	Building Construction	7/23/2016	12/9/2016	100
	Paving	12/10/2016	12/16/2016	5
	Architectural Painting	12/17/2016	12/23/2016	5
Road Construction	Grubbing/Land Clearing	1/1/2017	1/10/2017	9
	Grading/Excavation	1/12/2017	2/22/2017	41
	Drainage/Utilities	2/22/2017	3/20/2017	27
	Paving	3/21/2017	4/4/2017	14
Neighborhood 2	Backbone Infrastructure	1/1/2017	4/29/2017	86
Neighborhood 3	Backbone Infrastructure	1/1/2017	4/29/2017	86
Neighborhood 4	Backbone Infrastructure	1/2/2018	5/1/2018	86
Phase 3 – Vertical Development				
Neighborhoods 1 & 5	Building Construction	11/2/2016	10/11/2017	247
	Paving	11/2/2016	10/11/2017	247
	Architectural Painting	2/1/2017	10/11/2017	182
Neighborhood 2	Building Construction	10/12/2017	1/24/2018	75
	Paving	10/12/2017	1/24/2018	75
	Architectural Painting	12/12/2017	1/24/2018	32

Table 6 (cont.) ANTICIPATED CONSTRUCTION SCHEDULE				
Component	Construction Activity	Construction Period		
		Start	End	Number of Working Days
Phase 2 – Infrastructure, Road Construction and WTWRF Installation (cont.)				
Neighborhood 3	Building Construction	1/25/2018	10/10/2018	185
	Paving	1/25/2018	10/10/2018	185
	Architectural Painting	4/24/2018	10/10/2018	122
Neighborhood 4	Building Construction	10/11/2018	5/31/2019	167
	Paving	10/11/2018	5/31/2019	167
	Architectural Painting	1/08/2019	5/31/2019	104

Notes:

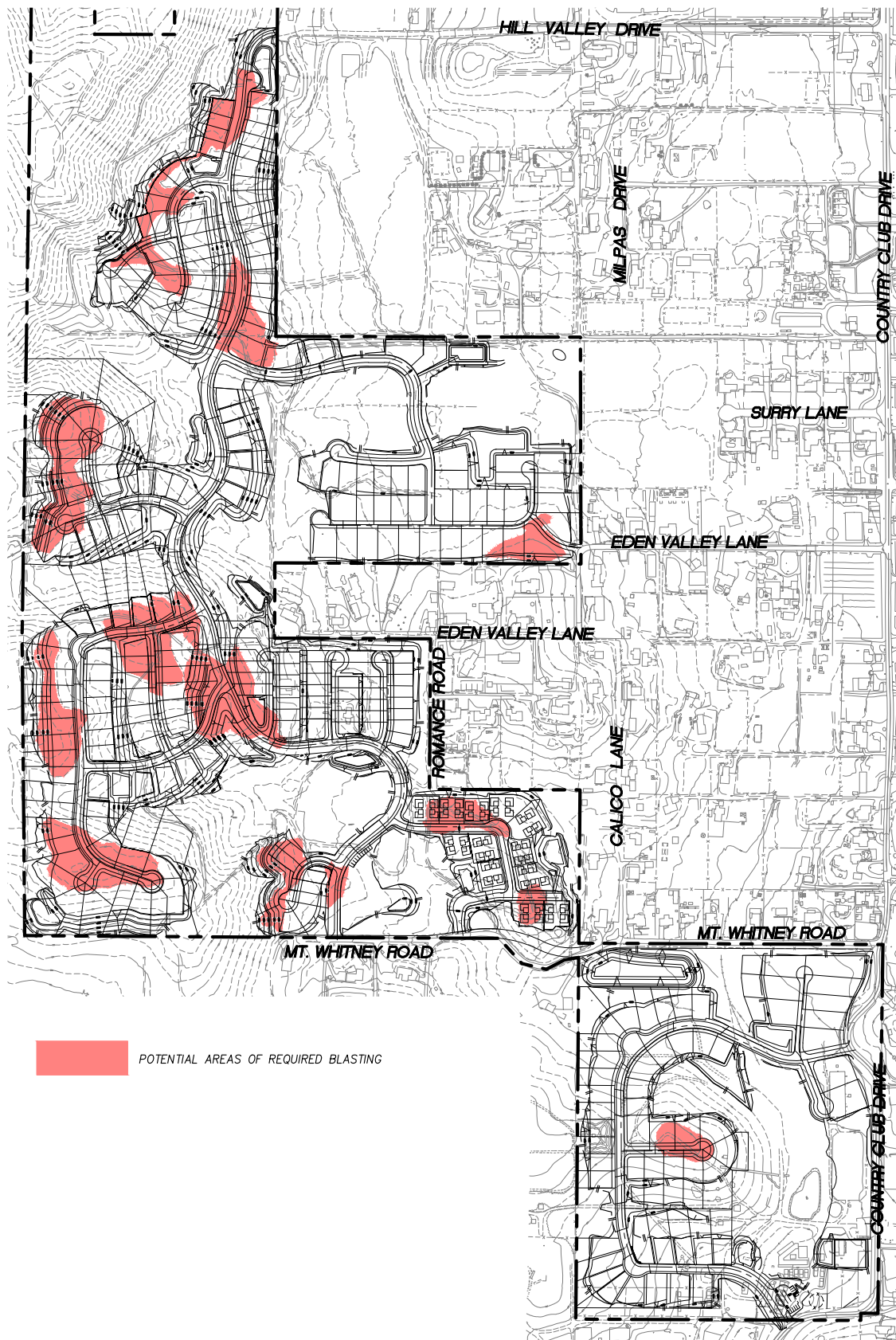
Project grading would encompass four distinct subphases requiring six to eight months duration with Neighborhoods 1 and 5 to include 165 DUs, 58 DUs in Neighborhood 2, 35 DUs in Neighborhood 3, and 76 DUs in Neighborhood 4. Construction of Project infrastructure would involve three stages extending over approximately one year, with Stage 1 encompassing Neighborhoods 1 and 5, Stage 2 including Neighborhoods 2 and 3, and Stage 3 encompassing Neighborhood 4. Vertical building for all five neighborhoods would extend up to approximately 2.5 years during Phase 3.

At any given time, the maximum acreage disturbed would be up to 25 acres per day.

Blasting

Blasting may be required at the site during initial site preparation and grading activity. Areas of the Project site that will be subject to rock cut and blasting are shown on Figure 6. Blasting operations would be conducted through the use of drilling and blasting to fracture rocks. At this time the exact amount of blasting has not been determined, however, it is assumed that approximately two to three blasting events may occur each week. Blasting operations would be conducted by a licensed blasting contractor, in strict compliance with pertinent federal, state, and county requirements. All blasting materials would be transported to the site for each blasting sequence and no explosives would be stored at the site. A single drill rig would be used to drill a pattern of bore holes each with a 3- to 6-inch diameter. Several holes are drilled in a 400 square-foot-area. Typically, the pattern is laid out in a 20-by-20-foot grid, with up to approximately 25-foot-deep holes. A contractor then loads the holes with carefully metered explosives. The “shot” is timed to detonate each hole(s) in sequence. This minimizes the ground vibration and noise of the blast, while maximizing fracture of the rock. Some dust is created as a result of the blast. However, the dust would be fully dissipated within 30 to 60 seconds following the shot. The rock would be broken up to sizes less than 18 inches in diameter.

Following blasting, the rock resource would be fractured and can be moved with conventional earthmoving equipment. A front-end loader will be used to spread the fractured rocks around the site for balanced cut/fill grading. A summary of the balanced soil cut/fill for each neighborhood is provided in Table 7 below:



Source: Fuscoe Engineering 2014

Site Areas with Rock Cut and Blasting

VALIANO

Figure 6

Table 7 EARTHWORK QUANTITIES BY NEIGHBORHOOD			
Neighborhood	Quantity (cubic yards)		
	Cut	Fill	Net
Neighborhood 1	146,000	137,00	9,000 Export to N3
Neighborhood 2	288,000	244,000	44,000 Export to N3
Neighborhood 3	62,000	115,000	53,000 Import from N1 and N2
Neighborhood 4	308,000	308,000	0
Neighborhood 5	124,000	124,000	0
TOTAL	928,000	928,000	0

Fugitive dust emissions associated with blasting can be estimated based on the USEPA's emission factor for blasting for coal mining to remove overburden, which is a similar process. According to Section 11.9 of AP-42, emissions from blasting would be calculated as follows:

$$\text{Pounds (lbs) PM}_{10}/\text{blast} = 0.000014(A)^{1.5} \times 0.52 \text{ lbs PM}_{10}/\text{lbs total suspended particulates (TSP)}$$

Where:

A is the area of blasting, which is approximately 400 square feet.

The Project would utilize ammonium nitrate/fuel oil (ANFO) explosives to conduct blasting on site. Based on the USEPA's AP-42 Section 13.3 emission factors, emissions from use of ANFO are estimated at 67 lbs CO per ton of explosive, and 17 lbs NO_x per ton of explosive. Based on typical construction projects, it was estimated that a maximum of 2,500 lbs/day (or 1.25 tons per day) could be used at the site; thus, the maximum daily emissions due to the use of ANFO would be 83.75 lbs/day of CO and 21 lbs/day of NO_x. The emission calculations for the drilling and blasting activities are provided in Appendix C.

Infrastructure Installation (Utilities, Roads, and WTWRF)

Following the mass grading and rock blasting, backbone infrastructure would be installed. This would consist of all the elements necessary to support developed uses on site, such as construction of roads, off-site connections to a potable water source and sewer lines, the construction of the WTWRF and associated pump stations, and the connection of all utility lines between these facilities and the Project boundary.

Dedication of Project biological open space areas would also occur as a first action during this phase, with concurrent monitoring of construction activities adjacent to any open space set aside. In order to provide a conservative assessment of potential emissions of criteria pollutants, the worst-case (peak) construction day was analyzed for this phase.

The proposed site of the WTWRF is currently occupied by the existing horse equestrian facility. Several horse stalls will be demolished during Phase 2. Because of the lack of specific details for the WTWRF, the default CalEEMod data was used to estimate the construction emissions. It is known that the construction of WTWRF would occur on approximately 0.4-acre lot (i.e., approximately 20,000 square feet for General Light Industrial) with approximately 6 months of construction activity was used in the CalEEMod construction modeling analysis.

The emissions of criteria pollutants from the construction activities for the off-site roadway areas were calculated using the Road Construction Emissions Model Version, 7.1.5.1, developed by Sacramento Metropolitan Air Quality Management District (SMAQMD). This model is typically used instead of (or in addition to) CalEEMod for linear roadway-type construction projects (SMAQMD, 2013). Earthwork for the offsite road improvements would be balanced for Hill Valley Road and would include 6,200 cubic yards (cy) of export for Mt. Whitney Road. Appendix B presents the Roadway Construction emission modeling output data.

Vertical Construction

Vertical construction of buildings is anticipated to take 2.5 years. The plan assumes that the residential neighborhoods would be constructed sequentially; however, the specific order of development would be market driven and cannot be specified at this time. This plan anticipates that Neighborhoods 1 and 5 would be developed first, Neighborhood 2 would be developed second, Neighborhood 3 would be developed third, and Neighborhood 4 would be developed last. As a result, building construction for some neighborhoods may overlap with previously constructed neighborhoods that are occupied and in operation.

Modeling Assumptions

The following options were selected in the CalEEMod model: site preparation, grading, trenching (backbone infrastructure), building construction, paving, and architectural coatings. Grading activity would be substantially balanced, meaning that no significant quantity of soil would be transported off site for disposal nor would soil be transported on site for use in construction activities.

Although it was assumed that all of the dust control measures listed in Section 1.3 of this report would be implemented, to model the most conservative construction estimates, only application of water during grading was taken into consideration when applying a control efficiency on particulate emissions. Based on the CalEEMod, Version 2013.2.2, the control efficiency for watering two times daily is 55 percent. For conservative purposes, the other control measures were not accounted for in the construction emission calculations.

Coatings used for the Project would have to conform to the SDAPCD Rule 67, which prohibits the use of architectural coatings (i.e., paints) that would exceed VOC content limits specified for each coating category in the rule. For modeling the Project's emissions in CalEEMod, conformance with these rules was therefore assumed. According to Rule 67, residential interior and exterior coatings must have a VOC content less than or equal to 100 g/L, and non-residential exterior and interior coatings must have a content less than or equal to 250 g/L. The quantities of

coatings that would be applied to the interior and exterior of the new buildings were estimated from the area of the surfaces to be coated and the required thickness of the coating. According to Section 4.7, Architectural Coatings, of Appendix A of the CalEEMod User's Guide, the program assumes the total residential surface area for painting equals 2.7 times the floor square footage. Applying that factor to the 1,800 square feet per single family dwelling unit listed in Table 2.1 of Appendix D of the CalEEMod User's Guide results in a default assumption that each single family residence would require approximately 4,860 square feet of paint coating.

Construction of the Proposed Project would require paving surface streets with asphalt. Asphaltic paving generates VOC emissions when the asphalt cures. VOC emissions from the paving were calculated using the CalEEMod default emission factors. According to the CalEEMod model, emissions from asphalt off-gassing can be estimated by assuming an emission rate of 2.62 lbs/acre of area to be paved. The amount to be paved was estimated to be 1 acre per day during the paving construction phase.

Construction would require heavy equipment during mass grading, utility installations, building construction and paving. Construction equipment estimates are based on project assumptions provided and default values in the CalEEMod, Version 2013.2.2 model. Beginning January 1, 2013, CARB requires all off-road equipment greater than 50 horsepower (hp) to comply with the USEPA Tier 2 through 4 engine emission standards and install PM filter devices. Table 8 presents a summary of the assumed equipment that would be involved in each stage of construction. Appendix A presents the CalEEMod construction emission modeling output data.

The engines of on-site construction equipment produce combustion emissions. Depending on the construction phase, construction equipment may include air compressors, lifts, boom trucks, cranes, graders, excavators, backhoes, loaders, welders, generators, and concrete pumps. The CalEEMod and Road Construction models provided the default list on the types and number of pieces of construction equipment to be used during each construction phase. The equipment was assumed to operate at a typical 8 hours per day schedule. Emission factors based on the CARB OFFROAD 2011 model were used to calculate construction equipment emissions. Because the project applicant currently anticipates that construction would occur in 2016, 2017, 2018, and 2019, emission factors for OFFROAD equipment for scenario years 2016, 2017, 2018, and 2019 were used.

All construction equipment operating on the Project site should meet USEPA-Certified Tier 4 emissions standards. In addition, all construction equipment would be outfitted with best available control technology (BACT) devices certified by the CARB. Any emissions control device used by the contractor would achieve emissions reductions that are no less than what could be achieved by a Level 2 diesel emissions control strategy for a similarly sized engine in accordance with the CARB regulations.

Table 8
CONSTRUCTION STAGES AND EQUIPMENT REQUIREMENTS

Off-road Equipment Type	Horsepower	Site Prep and Grading		Backbone Infrastructure		Building Construction		Paving		Architectural Coatings	
		Pieces	Hours	Pieces	Hours	Pieces	Hours	Pieces	Hours	Pieces	Hours
Aerial Lift	63	-	-	-	-	-	-	-	-	-	-
Air Compressors	78	-	-	-	-	-	-	-	-	1	6
Bore/Drill Rigs	206	-	-	-	-	-	-	-	-	-	-
Cement and Mortar Mixers	9	-	-	-	-	-	-	-	-	-	-
Cranes	226	-	-	-	-	4	7	-	-	-	-
Crawler Tractors	208	-	-	-	-	-	-	-	-	-	-
Dumpers/Tenders	16	-	-	-	-	-	-	-	-	-	-
Excavators	162	2	8	-	-	-	-	-	-	-	-
Forklifts	89	-	-	1	8	12	8	-	-	-	-
Generator Sets	84	-	-	-	-	4	8	-	-	-	-
Graders	174	1	8	-	-	-	-	-	-	-	-
Off-Highway Tractors	123	-	-	-	-	-	-	-	-	-	-
Off-Highway Trucks	400	-	-	2	8	-	-	-	-	-	-
Other Construction Equipment	172	-	-	-	-	-	-	-	-	-	-
Other General Industrial Equipment	88	-	-	-	-	-	-	-	-	-	-
Other Material Handling Equipment	167	-	-	1	8	-	-	-	-	-	-
Pavers	125	-	-	-	-	-	-	2	8	-	-
Paving Equipment	130	-	-	-	-	-	-	2	8	-	-
Plate Compactors	8	-	-	-	-	-	-	-	-	-	-
Pressure Washers	13	-	-	-	-	-	-	-	-	-	-
Pumps	84	-	-	-	-	-	-	-	-	-	-
Rollers	80	-	-	-	-	-	-	-	-	2	8
Rough Terrain Forklifts	100	-	-	-	-	-	-	-	-	-	-
Rubber Tired Dozers	255	4	8	-	-	-	-	-	-	-	-
Rubber Tired Loaders	200	-	-	-	-	-	-	-	-	-	-

Table 8 (cont.)
CONSTRUCTION STAGES AND EQUIPMENT REQUIREMENTS

Off-road Equipment Type	Horsepower	Site Prep and Grading		Backbone Infrastructure		Building Construction		Paving		Architectural Coatings	
		Pieces	Hours	Pieces	Hours	Pieces	Hours	Pieces	Hours	Pieces	Hours
Scrapers	361	2	8	-	-	-	-	-	-	-	-
Signal Boards	6	-	-	-	-	-	-	-	-	-	-
Skid Steer Loaders	65	-	-	-	-	-	-	-	-	-	-
Sweepers/Scrubbers	64	-	-	-	-	-	-	-	-	-	-
Tractors/Loaders/Backhoes	97	6	8	1	8	12	7	-	-	-	-
Trenchers	80	-	-	1	8	-	-	-	-	-	-
Welders	46	-	-	-	-	4	8	-	-	-	-

Note: Neighborhood construction would require different amounts of equipment to complete construction within the scheduled timing. To remain conservative, the component with the highest number of equipment needed was used for this table.

Short-term Construction Emissions

As depicted in Table 6, construction activities are anticipated to overlap occasionally throughout each year of construction, with 2019 being the only exception. Tables 9 through 11 provide summaries of the maximum daily construction emission estimates during each construction activity overlap for construction years 2016 to 2018, respectively. Table 12 provides a summary of the maximum daily construction emission estimates during 2019. As noted above, it was assumed that dust control measures (watering a minimum of two times daily) would be employed to reduce emissions of fugitive dust during site grading. The maximum daily emissions are compared to the daily emission thresholds to determine significance.

Table 9 ESTIMATED 2016 WORST-CASE CONSTRUCTION EMISSIONS – BY OVERLAPPING CONSTRUCTION ACTIVITIES						
Overlapping Construction Activities	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
	lbs/day					
Overlap 1						
Grading (N 1 & 5)	1	3	36	<1	9	5
Daily Maximum Total	1	3	36	<1	9	5
Overlap 2						
Grading (N 2)	1	3	36	<1	8	5
Drilling and Blasting (N 2)	<1	21	84	3	2	<1
Backbone Infrastructure (N 1 & 5)	1	2	23	<1	<1	<1
WTWRF Construction	25	3	11	<1	1	<1
Daily Maximum Total	26	29	153	3	12	5
Overlap 3						
Backbone Infrastructure (N 1 & 5)	1	2	23	<1	<1	<1
WTWRF Construction	25	3	11	<1	1	<1
Daily Maximum Total	26	5	34	<1	1	<1
Overlap 4						
WTWRF Construction	25	3	11	<1	1	<1
Vertical Building (N 1 & 5)	2	9	77	<1	1	<1
Daily Maximum Total	27	13	87	<1	2	<1
Significant Thresholds	75	250	550	250	100	55
Exceedance?	No	No	No	No	No	No

Notes:

1. Emissions were calculated for both summer and winter months, and the highest value is shown here.
2. USEPA Tier 4 off-Road equipment and diesel particulate filters were assumed to be utilized.
3. Fugitive dust measures were applied to control PM₁₀ and PM_{2.5} dust emissions.
4. N = Neighborhood

Table 10
ESTIMATED 2017 WORST-CASE CONSTRUCTION EMISSIONS –
BY OVERLAPPING CONSTRUCTION ACTIVITIES

Overlapping Construction Activities	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
	lbs/day					
Overlap 1						
Grading (N 3)	1	3	36	<1	8	5
Drilling and Blasting (N 3)	<1	21	84	3	2	<1
Backbone Infrastructure (N 2 & 3)	1	2	23	<1	<1	<1
Road Construction	4	44	18	<1	9	3
Vertical Building (N 1 & 5)	27	9	78	<1	1	<1
Daily Maximum Total	32	79	238	3	21	8
Overlap 2						
Backbone Infrastructure (N 2 & 3)	1	2	23	<1	<1	<1
Vertical Building (N 1 & 5)	27	9	78	<1	1	<1
Daily Maximum Total	27	11	101	<1	1	<1
Overlap 3						
Grading (N 4)	1	3	36	<1	8	5
Drilling and Blasting (N 4)	<1	21	84	3	2	<1
Vertical Building (N 1 & 5)	27	9	78	<1	1	<1
Daily Maximum Total	27	33	198	3	12	5
Significant Thresholds	75	250	550	250	100	55
Exceedance?	No	No	No	No	No	No

Notes:

1. Emissions were calculated for both summer and winter months, and the highest value is shown here.
2. USEPA Tier 4 off-Road equipment and diesel particulate filters were assumed to be utilized.
3. Fugitive dust measures were applied to control PM₁₀ and PM_{2.5} dust emissions.
4. N = Neighborhood

Table 11 ESTIMATED 2018 WORST-CASE CONSTRUCTION EMISSIONS – BY OVERLAPPING CONSTRUCTION ACTIVITIES						
Overlapping Construction Activities	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
	lbs/day					
Overlap 1						
Backbone Infrastructure (N 4)	1	2	23	<1	<1	<1
Vertical Building (N 2)	26	9	90	<1	<1	<1
Daily Maximum Total	27	11	113	<1	1	<1
Overlap 2						
Backbone Infrastructure (N 4)	1	2	23	<1	<1	<1
Vertical Building (N 3)	15	6	56	<1	1	<1
Daily Maximum Total	16	8	79	<1	1	<1
Significant Thresholds	75	250	550	250	100	55
Exceedance?	No	No	No	No	No	No

Notes:

1. Emissions were calculated for both summer and winter months, and the highest value is shown here.
2. USEPA Tier 4 off-Road equipment and diesel particulate filters were assumed to be utilized.
3. Fugitive dust measures were applied to control PM₁₀ and PM_{2.5} dust emissions.
4. N = Neighborhood

Table 12 ESTIMATED 2019 WORST-CASE CONSTRUCTION EMISSIONS						
Construction Activities (No Overlap)	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
	lbs/day					
Vertical Building (N 4)	41	9	77	<1	1	<1
Daily Maximum Total	41	9	77	<1	1	<1
Significant Thresholds	75	250	550	250	100	55
Exceedance?	No	No	No	No	No	No

Notes:

1. Emissions were calculated for both summer and winter months, and the highest value is shown here.
2. USEPA Tier 4 off-Road equipment and diesel particulate filters were assumed to be utilized.
3. Fugitive dust measures were applied to control PM₁₀ and PM_{2.5} dust emissions.
4. N = Neighborhood

As shown in Tables 9 through 12, with the minimum application of USEPA Tier 4 equipment, CARB diesel particulate filter devices, and best management practices to control emissions of fugitive dust, emissions of all criteria pollutants, including PM₁₀ and PM_{2.5}, would be below the daily thresholds during construction. The off-road diesel vehicle regulation applies to new equipment commonly purchased or leased for construction projects. Out-of-state companies doing business in California are also subject to the regulation. It should be noted that this regulation does not apply to existing equipment with less than 20 years old already purchased or leased by contractors.

Because emissions of all criteria pollutants during construction would be below the daily thresholds, construction of the Project would, therefore, not conflict with the NAAQS or CAAQS, and the construction impact is less than significant.

4.2.1.3 Control Measures and Design Considerations

The Project would incorporate BMPs during construction to reduce emissions of fugitive dust. SDAPCD Rule 55 – Fugitive Dust Control states that no dust and/or dirt shall leave the property line. SDAPCD Rule 55 requires the following:

- (1) **Airborne Dust Beyond the Property Line:** No person shall engage in construction or demolition activity subject to this rule in a manner that discharges visible dust emissions into the atmosphere beyond the property line for a period or periods aggregating more than 3 minutes in any 60 minute period.
- (2) **Track-Out/Carry-Out:** Visible roadway dust as a result of active operations, spillage from transport trucks, erosion, or track-out/carry-out shall:
 - (i) be minimized by the use of any of the following or equally effective trackout/carry-out and erosion control measures that apply to the Project or operation:
 - a. track-out grates or gravel beds at each egress point,
 - b. wheel-washing at each egress during muddy conditions, soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding; and for outbound transport trucks, and
 - c. secured tarps or cargo covering, watering, or treating of transported material; and
 - (ii) be removed at the conclusion of each work day when active operations cease, or every 24 hours for continuous operations. If a street sweeper is used to remove any track-out/carry-out, only PM₁₀-efficient street sweepers certified to meet the most current South Coast Air Quality Management District Rule 1186 requirements shall be used. The use of blowers for removal of track-out/carry-out is prohibited under any circumstances.

The control measures listed below are the BMPs that the Project would incorporate for dust control as well as minimizing pollutant emissions from diesel equipment:

- A minimum of two applications of water during grading between dozer/scrapper passes.
- Paving, chip sealing or chemical stabilization of internal roadways after completion of grading.
- Use of sweepers or water trucks to remove “track-out” at any point of public street access.
- Termination of grading if winds exceed 25 mph.
- Dirt storage piles will be stabilized by chemical binders, tarps, fencing or other erosion control.

- Disturbed areas shall be hydroseeded, landscaped, or developed as quickly as possible and as directed by the County and/or SDAPCD to reduce dust generation.
- A 15-mph speed limit will be enforced on unpaved surfaces.
- On dry days, dirt and debris spilled onto paved surfaces shall be swept up immediately to reduce resuspension of particulate matter caused by vehicle movement. Approach routes to construction sites shall be cleaned daily of construction-related dirt in dry weather.
- The Project will use building products that have at least a 10 percent recycled content.
- The Project will require the construction fleet to use any combination of diesel catalytic converters, diesel oxidation catalysts, diesel particulate filters and utilize CARB/USEPA Engine Certification Tier 4, or other equivalent methods approved by the CARB.
- Use of low-VOC coatings in accordance with SDAPCD Rule 67.
- Any blasting areas would be wet down prior to initiating the blast.

4.2.1.4 Significance after Mitigation

With design considerations noted above, the results show that construction-related emissions will be below the level of significance, taking into consideration potential overlapping of neighborhood construction. Therefore, Project criteria pollutants emissions during construction would constitute a less than significant impact on the ambient air quality.

4.2.2 Operational Impacts

Based on the County Guidelines (2007), operational impacts would be potentially significant if they exceed the quantitative screening-level thresholds for attainment/maintenance pollutants (NO₂, SO₂, and CO), and would result in a significant impact if they exceed the screening-level thresholds for nonattainment pollutants (ozone precursors and particulate matter).

4.2.2.1 Guidelines for the Determination of Significance

Would the project operations result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Ozone Precursors

- Would the project result in emissions that exceed 250 pounds per day of NO_x, or 75 pounds per day of VOCs?

Carbon Monoxide

- Would the project result in emissions of CO that when totaled with the ambient concentrations would exceed a 1-hour concentration of 20 parts per million (ppm) or an 8-hour average of 9 ppm?

Particulate Matter

- Would the project result in emissions of PM_{2.5} that exceed 55 pounds per day?
- Would the project result in emissions of PM₁₀ that exceed 100 pounds per day and increase the ambient PM₁₀ concentration by 5.0µg/m³ or greater at any sensitive receptor locations?

The primary operational emissions associated with the Project are CO, PM₁₀, and ozone precursors emitted as vehicle exhaust (NO_x and VOC). In addition, the WTWRF would potentially emit VOCs.

4.2.2.2 Significance of Impacts Prior to Mitigation

The main operational emissions sources associated with the Project are associated with traffic; emissions associated with area sources such as energy use, landscaping, and the use of fireplaces at the residences also would be generated.

Project-generated traffic was addressed in the Valiano TIA (LLG 2015). Based on the TIA, at full buildout the Project would generate 3,786 average daily trips (ADT). To estimate emissions associated with Project-generated traffic, the CalEEMod model was used. Motor vehicle emission rates are, therefore, based on CARB's EMFAC state-wide emission factors for the San Diego County region. Emission factors representing the vehicle mix for emission analysis years 2018 through 2020 were used to estimate emissions. Based on the results of the CalEEMod model for subsequent years, emissions would decrease on an annual basis from 2018 onward due to phase-out of higher polluting vehicles and implementation of more stringent emission standards. Default vehicle speeds, trip lengths, trip purpose, and trip type percentages for single family homes were used. Trip rates were based on the TIA, which estimated 10 daily trips per dwelling unit for Neighborhoods 1, 2, 4, and 48 units in 5; 12 daily trips per dwelling unit for Neighborhoods 3 and the remaining units in 5; a total of 324 daily trips from multi-generational Second Dwelling Units in neighborhoods 2, 3, and 5; and 10 total daily trips for the WTWRF. Four additional trips per day were added to the analysis to account for the public Neighborhood Park.

Residential units were assumed to only have natural gas fireplaces. Area source emissions, including emissions from energy use, fireplaces, landscaping, and maintenance use of architectural coatings, were calculated using the CalEEMod model. Operational emission calculations and model outputs are provided in Appendix D. Tables 13 through 15 present the summary of annual operational emissions for neighborhoods, which include operational emissions from off-road equipment (i.e., generators associated with the fire pump station and the WTWRF) and other emissions associated with the WTWRF the embodied electrical energy consumption, and workers and delivery vehicle trips. Biogenic emissions from the WTWRF processes are not considered in the analysis.

As shown in Tables 13 through 15, Project emissions of all criteria pollutants during operation would be below the daily thresholds. Therefore, operation of the Project would not be considered a significant impact on air quality.

Table 13 ESTIMATED 2018 OPERATIONAL EMISSIONS (lbs/day)						
Category	VOC	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Neighborhoods 1 & 5						
Area	9	<1	14	<1	<1	<1
Energy	<1	1	<1	<1	<1	<1
Mobile	6	14	66	<1	11	3
Off-road Equipment	1	8	7	<1	1	1
TOTAL	17	24	87	<1	12	4
Screening-Level Thresholds	75	250	550	250	100	55
Exceedance?	No	No	No	No	No	No

Note:

Emissions were calculated for both summer and winter months, and the highest value is shown here.

Operational emissions associated with the WTWRF are included in the Project emissions. Off-road emissions consist of two generators (one associated with the WTWRF and one associated with the Fire Pump Station).

Table 14 ESTIMATED 2019 OPERATIONAL EMISSIONS (lbs/day)						
Category	VOC	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Neighborhoods 1 – 3 & 5						
Area	14	<1	21	<1	<1	<1
Energy	<1	2	1	<1	<1	<1
Mobile	10	22	102	<1	19	5
Off-road Equipment	1	8	7	<1	1	1
TOTAL	25	32	132	<1	20	6
Screening-Level Thresholds	75	250	550	250	100	55
Exceedance?	No	No	No	No	No	No

Note:

Emissions were calculated for both summer and winter months, and the highest value is shown here.

Operational emissions associated with the WTWRF are included in the Project emissions. Off-road emissions consist of two generators (one associated with the WTWRF and one associated with the Fire Pump Station).

Table 15 ESTIMATED 2020 OPERATIONAL EMISSIONS (lbs/day)						
Category	VOC	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Neighborhoods 1 - 5						
Area	20	<1	28	<1	1	1
Energy	<1	2	1	<1	<1	<1
Mobile	12	25	121	<1	23	6
Off-road Equipment	1	8	7	<1	1	1
TOTAL	33	36	157	<1	25	8
Screening-Level Thresholds	75	250	550	250	100	55
Exceedance?	No	No	No	No	No	No

Note:

Emissions were calculated for both summer and winter months, and the highest value is shown here.

Operational emissions associated with the WTWRF are included in the Project emissions. Off-road emissions consist of two generators (one associated with the WTWRF and one associated with the Fire Pump Station).

Due to the anticipated construction of the neighborhoods, it is possible that occupation of a neighborhood may occur concurrently with construction of another neighborhood. Based on the construction schedule in Table 6, two worst-case scenarios (with concurrent neighborhood operation and construction) were identified. As shown in Table 16, the first scenario assumes that Neighborhoods 1 and 2 would be occupied and operating concurrent with construction activities of Neighborhoods 2 and 4 (vertical building and backbone infrastructure, respectively). Table 17 shows the combined emissions during operation of Neighborhoods 1, 5, 2, and 3 and vertical construction of Neighborhood 4. Operational emissions from the WTWRF and generators are also included in both worst-case scenarios.

The combined construction and operational emissions would be below the significance threshold for all criteria pollutants, and would, therefore, be less than significant. All other pollutants would not exceed the significance thresholds and would, therefore, not be considered significant impacts under CEQA.

The CalEEMod model outputs for operational emissions are presented in Appendix D. As shown in Tables 13 through 17, emissions of criteria pollutants during operation of the Project, including concurrent with construction emissions, would not exceed the daily thresholds for any of the criteria pollutants. Therefore, no significant air quality impact is anticipated and mitigation measures are not required.

Table 16 WORST-CASE 2018 DAILY EMISSIONS - CONCURRENT OPERATION AND CONSTRUCTION							
Neighborhood	Category	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
		lbs/day					
1 & 5	Operational	17	24	87	<1	12	4
2	Construction (Vertical Building)	26	9	90	<1	<1	<1
4	Construction (Backbone Infrastructure)	1	2	23	<1	<1	<1
TOTAL		44	35	200	<1	13	4
Screening-Level Thresholds		75	250	550	250	100	55
Exceedance?		No	No	No	No	No	No

Notes:

Peak Daily Emissions were calculated for both summer and winter months, and the highest value is shown here.

Total for Peak Daily Operational Emissions includes Area, Energy, Mobile, and Off-road Equipment sources.

Table 17 WORST-CASE 2019 DAILY EMISSIONS - CONCURRENT OPERATION AND CONSTRUCTION							
Neighborhood	Category	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
		lbs/day					
1, 2, 3 & 5	Operational	25	32	132	<1	20	6
4	Construction (Vertical Building)	41	9	77	<1	1	<1
TOTAL		66	41	209	<1	21	7
Screening-Level Thresholds		75	250	550	250	100	55
Exceedance?		No	No	No	No	No	No

Notes:

Peak Daily Emissions were calculated for both summer and winter months, and the highest value is shown here.

Total for Peak Daily Operational Emissions includes Area, Energy, Mobile, and Off-road Equipment sources.

Wastewater Treatment and Water Reclamation Facility

Criteria pollutant and TAC emissions would be generated during treatment of the influent at the WTWRF. Most air pollutant emissions would be produced during degradation or reaction while in the treatment system. Organic compounds would volatilize from the liquid surface of the reactors during the biological treatment of influent.

Emission factors and speciation for volatile compounds from influent treatment were obtained from the San Joaquin Valley Air Pollution Control District (SJVAPCD) (1993). These are general emission factors expressed in terms of pounds of pollutant emissions per million gallons per day (mgd) of influent. These factors were used to estimate daily emissions of various TACs

typically contained in influent waste streams. Emissions of TACs from treatment were estimated for full buildout influent throughput of 0.19 mgd.

A screening-level health risk assessment was performed using the USEPA SCREEN3 model. SCREEN3 uses worst-case meteorological conditions to conservatively estimate ground-level pollutant concentrations downwind of the source. The SCREEN3 results were combined with unit risk factors and reference exposure levels obtained from the OEHHA to evaluate cancer, chronic non-cancer, and acute health risk (OEHHA 2003a). The modeled cancer, chronic non-cancer, and acute non-cancer risks were modeled for each individual compound and the results added to produce a conservative estimate of risk from all compounds. Table 18 summarizes the parameters used in the SCREEN3 modeling.

Table 18 PARAMETERS USED IN SCREEN3 DISPERSION MODELING	
Modeling Parameter	Values Used in Model
Emission rate	1 grams per second
1-hour average to annual average persistence factor	0.1
Stack height	12.8 meters (42 feet)
Stack diameter	0.91 meters (3 feet)
Stack exit velocity	3.66 meters per second (10 feet per second)
Stack gas exit temperature	294.3 Kelvin
Land use	Rural

Diesel-powered emergency generators would be used at the WTWRF for backup power during electric power failures. Emission factors for the generator engines (industrial internal combustion engines) were obtained from the USEPA document *Compilation of Air Pollutant Emission Factors*, commonly known as AP-42 (1996). Annual emissions were calculated based on the annual testing frequency and duration and the power output of the engines. For the purposes of this analysis it was assumed that 2 84 hp generators would operate for 8 hours per day, 260 days per year.

Aqueous hypochlorite would be stored on site and used for the chlorination process. There would be potential for accidental release of such a substance. However, the facility staff would follow the administrative and engineering requirements of the California Accidental Release Prevention Program. The California Accidental Release Prevention Program's main objective is to prevent accidental releases of regulated substances determined to potentially pose the greatest risk of immediate harm to the public and the environment. The planning activities required by the program are intended to minimize the possibility of an accidental release by encouraging engineering and administrative controls (USEPA 2014). It is further intended to mitigate the effects of an accidental release, by requiring owners or operators of facilities to develop and implement an accident prevention program. Any accidental release of this substance would be

contained on site with no offsite runoff, and handlers would be trained in spill reaction. As such, there would be no impact resulting from the storage of this compound at the facility.

TAC emissions from the WTWRF would be produced during reaction or degradation while in the treatment system. Compounds would volatilize from the liquid surface of the reactors during the biological treatment of influent. Total TAC emissions are summarized in Table 19.

Table 19 ESTIMATED TAC EMISSIONS FROM WTWRF	
Compound	Peak Daily Emissions (lbs/day)
Ammonia	4.765E-05
Benzene	9.227E-08
Chloroform	1.289E-06
Ethyl Benzene	3.58E-07
Hydrogen Sulfide	3.102E-06
1,1,1-TCA	4.216E-07
Methylene Chlorine	1.241E-06
1,4-Dichlorobenzene	7.398E-07
Phenol	1.559E-06
Styrene	7.955E-07
Toluene	7.796E-07
TCE	4.136E-07
Xylene	9.323E-07
TOTAL VOC EMISSION	5.937E-05 (or 0.00005937)

Specific information about emission controls as part of the facility's design is not currently known. However, it is assumed that sufficient controls would be used to substantially reduce emissions. Tightly covered, well-maintained collection systems can suppress emissions by 95-99% (USEPA 1998). The types of control technology generally used in reducing TAC emissions from wastewater include steam or air stripping, carbon adsorption, chemical oxidation, membrane separation, liquid-liquid extraction, and biotreatment (aerobic or anaerobic) (USEPA 1998). As shown in Table 18, the total TAC emissions of criteria pollutants from operation of the WTWRF are below the SDAPCD thresholds of significance, resulting in a less than significant impact. The mass emissions, when combined with other operational emissions, would also be below the County's screening level thresholds.

Traffic Related CO Concentrations (CO Hot Spot Analysis)

Vehicle exhaust is the primary source of CO. In an urban setting the highest CO concentrations are generally found within close proximity to congested intersections. Under typical meteorological conditions, CO concentrations tend to decrease as distance from the emissions source (i.e., congested intersection) increase. Project-generated traffic has the potential of contributing to localized hot spots of CO off-site. Because CO is a byproduct of incomplete

combustion, exhaust emissions are worse when fossil-fueled vehicles are operated inefficiently, such as in stop-and-go traffic or through heavily congested intersections, where the level of service (LOS) is severely degraded.

The CARB also recommends evaluation of the potential for the formation of locally high concentrations of CO, known as CO hot spots. A CO hot spot is a localized concentration of CO that is above the state or national 1-hour or 8-hour CO ambient air standards. To verify that the Project would not cause or contribute to a violation of the 1-hour and 8-hour CO standards, an evaluation of the potential for CO hot spots at nearby intersections was conducted.

The TIA (LLG 2015) evaluated whether or not there would be a decrease in the LOS at the intersections affected by the Proposed Project. The potential for CO hot spots was evaluated based on the results of the TIA. The Transportation Project-Level Carbon Monoxide Protocol (Caltrans 1998) was followed to determine whether a CO hot spot is likely to form due to project-generated traffic. In accordance with the Protocol, CO hot spots are typically evaluated when: (a) the LOS of an intersection or roadway decreases to a LOS E or worse; (b) signalization and/or channelization is added to an intersection; and, (c) sensitive receptors such as residences, schools, hospitals, etc. are located in the vicinity of the affected intersection or roadway segment.

According to the TIA, all intersections under the Existing Plus Project scenario are calculated to continue to operate at acceptable level of service (LOS) of LOS D or better (LLG 2015). Therefore, the LOS would not decrease to a rating of LOS E or worse, and as a result, no exceedances of the CO standard are expected. The Existing Plus Project scenario would not cause or contribute to a violation of the air quality standard.

4.2.2.3 Mitigation Measures and Design Considerations

Operation emissions of VOCs, NO_x, CO, and PM₁₀, and PM_{2.5} for the Project with design features, and combined construction and operational emissions with design features would be below the significance thresholds. A wide range of current regulatory codes, project design features, and other measures would be incorporated into the Proposed Project. The Project would incorporate energy-efficiency features that would meet the 2013 California Title 24 Energy Efficiency Standards, thereby exceeding 2008 California Title 24 Energy Efficiency Standards by at least 15 percent. The installation of natural gas fireplaces would prevent residences from using wood as fuel for fire and prevent the generation of PM₁₀ emissions in the area. The installation of low-flow or high-efficiency water fixtures in residences reduces water demand, and its associated embodied energy demand, and associated indirect air quality emissions. The Project would provide areas for recyclable materials collection and would use building products that have at least a 10-percent recycle content. These Project design features were selected under the mitigation measure menu in the CalEEMod model. Given the result of a less-than-significant impact, no additional mitigation measures would be required.

4.2.2.4 Significance of Impacts following Mitigation

Operation emissions of VOCs, CO, and PM₁₀, and PM_{2.5} for the full Project buildout, and combined construction and operational emissions would be below the significance thresholds and would therefore be less than significant under CEQA.

4.3 Cumulatively Considerable Net Increase of Criteria Pollutants

4.3.1 Construction Impacts

Based on the County Guidelines (2007), a project would result in a cumulatively significant impact if the project results in a significant contribution to the cumulative increase in pollutants for which the SDAB is listed as nonattainment for the CAAQS and NAAQS. As discussed in Section 2.0, the SDAB is designated as a nonattainment area for the NAAQS for ozone and the CAAQS for ozone, PM₁₀, and PM_{2.5}.

Cumulatively considerable net increases during the construction phase would typically happen if two or more projects near each other are simultaneously constructing projects. A project that has a significant direct impact on air quality with regard to emissions of PM₁₀, PM_{2.5}, NO_x, or VOCs during construction would also have a significant cumulatively considerable net increase. In the event direct impacts from a proposed project are less than significant, a project may still have a cumulatively considerable impact on air quality if the emissions of concern from the proposed project, in combination with the emissions of concern from other proposed or reasonably foreseeable future projects within a proximity relevant to the pollutants of concern, are in excess of the guidelines identified in Section 3.0.

4.3.1.1 Guidelines for the Determination of Significance

- Would the project construction result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation?
- Would the project result in emissions that exceed 250 pounds per day of NO_x, or 75 pounds per day of VOCs?
- Would the project result in emissions of PM_{2.5} that exceed 55 pounds per day?

4.3.1.2 Significance of Impacts Prior to Mitigation

Although the environmental effects of an individual project may not be significant when that project is considered independently, the combined effects of several projects may be significant when considered collectively. Section 15130(a) of the State CEQA Guidelines requires that an EIR address significant cumulative impacts. According to this section of CEQA, the discussion of cumulative impacts “...need not provide as great a detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness.” The discussion should also focus only on significant effects resulting from the project’s incremental effects and the effects of other projects. If the environmental

conditions would essentially be the same with or without the proposed project's contribution, then it may be concluded that the effect is not significant. According to Section 15130(a)(1), "an EIR should not discuss impacts which do not result in part from the project evaluated in the EIR." The basis for the analysis of cumulative impacts is dependent on the nature of the issue.

Cumulative impact analysis may be conducted and presented by either of two methods: (1) a list of past, present, and probable activities producing related or cumulative impacts; or (2) a summary of projections contained in an adopted general plan or related planning document. The summary approach was utilized for the near-term analysis presented below. The cumulative impacts of past, present, and probable future projects that have occurred or will likely occur in the Project site's proximity (known as "cumulative projects") are presented in Figure 7.

As discussed in Section 4.2.1.4, Project emissions of VOC, NO_x, PM₁₀, and PM_{2.5} during construction would be below the screening-level thresholds and would result in a less than significant air quality impact. Based on the information from the TIA, there are 41 cumulative projects expected to contribute to the overall growth within the 5-mile buffer area. Based on research conducted for the cumulative condition, 3 County of San Diego projects, 31 City of San Marcos projects, and 7 City of Escondido projects were identified for inclusion in the air quality study. The following is a brief description of each of the cumulative projects in the general vicinity of the Project.

COUNTY OF SAN DIEGO

1. **Harmony Grove Industrial Park** is a 13.53-acre industrial development located at the Enterprise Street/Andreasen Drive intersection.
2. **Harmony Grove Meadows** proposes the development of 216 single family detached DUs in the County of San Diego.
3. **Harmony Grove Village South** is a parcel located southeast of Harmony Grove Village project bounded by Country Club Drive to the northwest, Cordrey Drive to the west, and undeveloped land to the north. The project proposes the development of 453 single-family homes on 111 acres.

CITY OF SAN MARCOS

1. **University District Specific Plan** – The 194 acre proposed project is located on Twin Oaks Valley Road, north of Discovery Street. The project proposes 1,000,000 square feet of commercial, 938,000 square feet of office space, 2,600 units of mixed-use residential, 800 units of student housing, and 450 hotel rooms.
2. **Palomar Station** is a proposed mixed-use developed that consists of 333 residential units, 55,260 square feet of commercial, and 9,800square feet of office space. The project is located on Las Posas Road both north and south of Armorlite Drive.

3. **San Marcos Creek District Specific Plan** is a proposed mixed-use development that consists of 2,300 residential units, 1.3 million square feet of commercial, and 589,000 square feet of office space. The project is located on San Marcos Boulevard between Via Vera Cruz and SR-78.
4. **Rancho Santalina** is a 237-unit residential development located north of Las Flores Drive and South Santa Fe Road.
5. **San Elijo Hills** is a specific plan area that consists of 3,398 residential units, 97,000 square feet of commercial, 100,000 square feet of office space, 1,050 acres of open space and 59 acres for elementary school use. The project is located near the intersection of San Elijo Hills and Elfin Forest Road.
6. **Marketplace @ Twin Oaks** is a proposed mixed-use development that consists of a 168,419-square foot shopping center, a 2-story and a 3-story office building. The project is located near the southwest corner of the intersection of Twin Oaks Valley Road and San Marcos Boulevard.
7. **University of St. Augustine** is a proposed physical therapy graduate school consisting of 77,500 square feet in Phase 1 and 44,000 square feet in Phase 2. The project is located at 700 Windy Point Drive.
8. **Pacific Industrial No.1** is a proposed 22,160-square foot industrial building. The project is located on Pacific Street, north of Grand Avenue.
9. **Old Creek Ranch** is a proposed development consisting of 401 single-family homes, 1,123 multi-family homes, 103 acres light industrial and 181 acres of open space on 416 total acres. The project is located on San Elijo Road east of Rancho Santa Fe Road.
10. **Kachay Homes** is a proposed development consisting of 8 single-family homes on a one-acre lot subdivision. The project is located on the southeast corner of Richland and Mulberry Road.
11. **Kaiser Hospital Medical Office** is a 3-story, 70,667-square foot outpatient medical office building and 335 parking stalls. The project is located at 400 Craven Road.
12. **Westlake Village** is a proposed mixed-use development containing 105 residential units and 5,000 square feet of commercial space located on Autumn Drive.
13. **Heritage Ranch** is an approved 16 unit residential development on Richland Road.
14. **East Gate** proposes a mixed-use development of 42 multi-family affordable housing units and 11,285 square feet of retail/commercial. The site is located on the northwest corner of Grand Avenue and Future Creekside Road.

- 

Project Boundary

County of San Diego

1

Harmony Grove Village

2

Harmony Grove Industrial Park

3

Harmony Grove Meadows

City of San Marcos

1

University Office and Medical Park

2

University District Specific Plan

3

Poinsettia Arbor

4

Palomar Station (2)

5

San Marcos Creek District Specific Plan

6

Rancho Santalina

7

San Elijo Hills

8

Civic Center Marketplace

9

Nordahl Medical Center

10

University of St. Augustine

11

Twin Valley Light Industrial Building

12

Pacific Industrial No. 1

13

Old Creek Ranch

14

Kachay Homes

15

High Tech High School (Interim Facility)

16

High Tech High School (Interim Facility)

17

San Elijo Sports Club

18

Campus Pointe Office Building

19

Kaiser Medical Office Building

20

Westlake Village

21

Heritage Ranch

22

Palomar College Master Plan

23

East Gate

24

Hotel

25

Campus Pointe II

26

Davia Village

27

Windy Point Development

28

Parkview Apartments

29

San Elijo Hills Town Center

30

Main Street Plaza

31

City of San Marcos, 31, Richmar Specific Plan

32

The Residences at Creekside and the Shoppes at Creekside

33

The Quad at CSUSM

34

Marketplace @ Twin Oaks
- City of Escondido**

1

Citracado Parkway Extension

2

Citracado High School

3

Escondido Asphalt Plant Expansion

4

Springhill Suites by Marriott

5

City of Escondido, 5, 350 La Terraza Boulevard

6

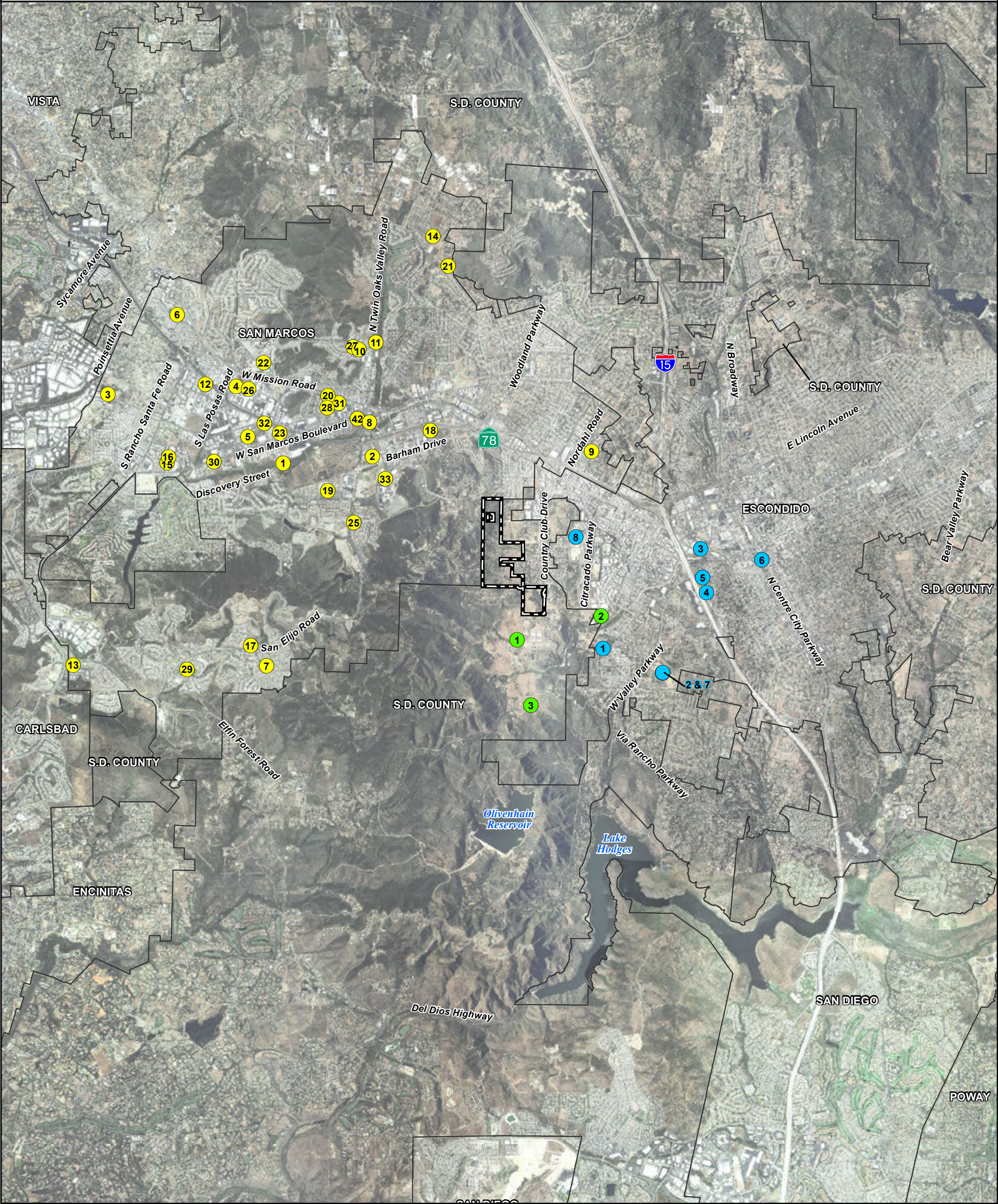
Citysquare Downtown Residential

7

Del Lago Academy

8

Escondido Research & Technology Center (ERTC)



Cumulative Projects

15. **Campus Pointe II** proposed to construct 108 residential units and 10,000 square feet of retail space (previously approved as “The Quorum”). The grading phase was underway as of June 2012 with the residential portion under construction.
16. **Davia Village (Milano Holdings, Inc.)** proposes a mixed-use project of 3 stories, 368 residential apartments, 19,855 square feet of commercial/retail, and 8,895 square feet of live/work units. The project is located at 1001 Armorlite Drive.
17. **Windy Point Development** is four proposed light industrial buildings and three office buildings on Borden Road at the extension of Windy Way. An application has been submitted to modify the industrial buildings to an office park.
18. **Parkview Apartments** is a proposed development of 81 affordable housing units and 4,500 square feet of commercial development. The project is located at 210-262 Chinaberry and 351 Autumn Drive.
19. **San Elijo Hills Town Center** is a mixed-use development that consists of 12,000 square feet of ground-floor commercial space and 12 condominiums. The project is located at San Elijo Road and Elfin Forest Road.
20. **Main Street Plaza** is a proposed mixed-use development that consists of 475 apartments, 62,080 square feet of commercial use, 14,800 square feet of office use, 40,000 square feet of residential storage, and a 4,559 gym/lounge. The project is located in the San Marcos Creek District Specific Plan area at 1167 West San Marcos Boulevard.
21. **Richmar Specific Plan** is the evaluation of a Specific Plan focusing on mixed-use development between Richmar Avenue and Mission Road and along Autumn Drive with extension of Tiger Way. The project is located south of Richmar Avenue to the area north of San Marcos Elementary School, south of Autumn Drive, and from Paseo de Oro to Firebird.
22. **The Promenade at Creekside** is a proposed mixed-use development that consists of 98 apartments and 31,000 square feet of commercial use. The project is located in the San Marcos Creek District Specific Plan area at South Bent Avenue and Grand Avenue.
23. **The Quad at CSUSM** is a proposed 5-story mixed-use building consisting of 174,000 square feet of student housing and retail space.
24. **Sonic Drive-In** is a proposed 1,795-square foot drive-in restaurant with 899 square feet of outside dining area. The project is located at the southeast corner of Grand Avenue and Via Vera Cruz.
25. **Pacific Commercial** is a project proposing development of 31,776 square feet of commercial space on a 2.77 acre lot at the northeast corner of Grand Avenue and Pacific Street.

26. **Nicholas Banche** is a proposed development of 11 single-family homes in the area of Poinsettia Avenue and Specialty Drive.
27. **Candera** is a partially complete development consisting of 50 multi-family units and 8 single-family homes. The project is located at Bougher Road and Via Camellia.
28. **Leigh Hanson site** is a proposed Specific Plan Amendment to allow construction of 346 dwelling units consisting of single-family and duplex units, and a K-8 school. The project is located on Twin Oaks Valley Road, south of Craven Road.
29. **San Marcos Highlands** is a proposed project consisting of 198 single-family homes located at the northern terminus of Las Posas Road.
30. **UK Investments, LLC** is a proposed project consisting of 35 units of multi-family housing on North Alda Drive.
31. **Shane Park Plaza** is a proposed mixed-use neighborhood shopping center consisting of 6,138 square feet of retail use and 19 multi-family dwelling units. The project is located on Rancho Santa Fe Road between Grand Avenue and La Mirada Drive.

CITY OF ESCONDIDO

1. **Citracado High School** is located south of W. Valley Parkway and north of Citracado Parkway. The high school is expected to serve 800 students in grades 9 through 12.
2. **Escondido Asphalt Expansion** is located at 500 North Tulip Street and proposes to expand the operations of an existing asphalt concrete plant from 250,000 tons per year of material to 400,000 tons per year.
3. **Springhill Suites by Marriott** is located at 300 La Terraza Boulevard in the City of Escondido. The project consists of 105 hotel rooms.
4. **350 La Terraza Boulevard** is located on La Terraza Boulevard north of 9th Avenue and south of Valley Parkway in the City of Escondido. The project consists of a 44,000-square foot office building.
5. **City Square Residential** project is located at the southeast corner of the Centre City Parkway/2nd Avenue intersection in the City of Escondido. This project consists of developing 102 multi-family DUs, 20 of which are already developed.
6. **Del Lago Academy** is a magnet biotechnology high school projected to open in fall 2013. It is located on a 34-acre site off W. Valley Parkway near Citracado Parkway and is expected to serve up to 800 students.

7. **Escondido Research and Technology Center (ERTC)** is a research center comprising of 208 acres located along the future alignment of Citracado Parkway in the City of Escondido.

The SDAB has been designated as a federal nonattainment area for ozone, and a state nonattainment area for ozone, PM₁₀, and PM_{2.5}. PM₁₀ and PM_{2.5} emissions associated with construction generally result in near-field impacts. The nonattainment status is the result of cumulative emissions from all sources of these air pollutants and their precursors within the SDAB. As discussed above, the emissions of all criteria pollutants, including PM₁₀ and PM_{2.5}, would be well below the significance levels during construction. Construction would be temporary and consistent with the size and scale of the Project. Construction activities required for the implementation of the Project would not result in significant impacts to air quality. However, it is possible that construction associated with several other projects would occur in the general vicinity of the Project at the same time, and cumulative construction projects would result in a cumulatively considerable net increase in VOC, NO_x, PM₁₀ and PM_{2.5}. This cumulative impact would be significant.

4.3.1.3 Mitigation Measures and Design Considerations

Control measures for construction are discussed in Section 4.2.1.3. As discussed in that section, implementation of standard construction mitigation measures controlling fugitive dust emissions would minimize the Project's contribution to cumulative air quality impacts from construction activities. Cumulative projects would also need to comply with SDAPCD Rules for dust control and construction equipment. There are no other feasible mitigation measures that would reduce the cumulative emissions below a level of significance for construction.

4.3.1.4 Significance of Impacts Following Mitigation

Project construction would result in a cumulatively considerable net increase in emissions of VOC, NO_x, PM₁₀ and PM_{2.5}. Impacts would remain significant even with design considerations to reduce fugitive dust during construction. Project construction would therefore result in a significant, but temporary, cumulative impact to the ambient air quality that would be unmitigated.

4.3.2 Operational Impacts

As discussed above, based on the County Guidelines (2007), a project would result in a cumulatively significant impact if the project results in a significant contribution to the cumulative increase in NO_x, VOCs, PM₁₀, and PM_{2.5}. In accordance with the guidelines, a project that does not conform to the RAQS and/or has a significant direct impact on air quality with regard to operational emissions of nonattainment pollutants would also have a cumulatively considerable net increase. Also, projects that cause road intersections to operate at or below a LOS E and create a CO hot spot create a cumulatively considerable net increase of CO.

4.3.2.1 Guidelines for the Determination of Significance

- Would the project conform to the RAQS and/or have a significant direct impact on air quality with regard to operational emissions of PM₁₀, PM_{2.5}, NO_x, and/or VOCs, which would also have a significant cumulatively considerable net increase in these emissions?
- Would the project cause road intersections or roadway segments to operate at or below LOS E and create a CO hotspot that would result in a cumulatively considerable net increase of CO?

4.3.2.2 Significance of Impacts Prior to Mitigation

As stated in Section 4.3.1.2, in addition to the Project, there are 44 cumulative projects expected to contribute to the overall growth within the 5-mile buffer area. The current General Plan designations for the Project site are SR-1 and SR-2, and the Regional Category is Semi Rural. Under the current General Plan, a maximum of 118 DU would be permitted (at a minimum of 1-acre lot sizes). Applying the average trip rate from the TIA (11.3 trips per dwelling unit), approximately 1,334 ADT would be generated by the existing zoning. The proposed 334 DUs associated with the Project would generate approximately 3,786 ADT, a net increase from the current zoning of 2,452 ADT. To estimate emissions associated with Project-generated traffic, the CalEEMod model was used to determine the net increase in criteria pollutants. Table 20 presents a summary of the net increases in criteria pollutants, which shows that the Project would cumulatively contribute to the regional air quality.

Table 20 ADDITIONAL OPERATIONAL EMISSIONS OF PROJECT DENSITY AS COMPARED TO THE GENERAL PLAN DENSITY ALLOWANCE				
Category	VOC	NO_x	PM₁₀	PM_{2.5}
	lbs/day			
Area	7	<1	<1	<1
Energy	<1	1	<1	<1
Mobile	4	9	8	2
TOTAL	11	10	8	3

Note: Emissions were calculated for both summer and winter months, and the highest value is shown here.

Based on the analysis presented in Section 4.1, the Project would be inconsistent with the RAQS and SIP. As a result, the cumulative considerable contribution to the regional air quality impact is considered significant.

Carbon Monoxide

The TIA (LLG 2015) has identified 10 intersections that would result in a cumulatively significant decline in level of service:

1. E. Barham Drive / S. Twin Oaks Valley Road
2. E. Barham Drive / Woodland Parkway
3. Nordahl Road / SR 78 Westbound Ramps
4. Auto Park Way at Mission Avenue
5. Auto Park Way / Country Club Drive
6. Valley Parkway / 9th Avenue
7. Valley Parkway / Auto Park Way
8. Valley Parkway / I-15 SB Ramps
9. Valley Parkway / I-15 Northbound Ramps
10. Harmony Grove Road / Kauana Loa Drive

Project-generated vehicle trips would increase traffic volumes at roadway intersections in the site vicinity once the Project becomes operational. During periods of near-calm winds, heavily congested intersections can produce elevated levels of CO that could potentially impact nearby sensitive receptors. Therefore, a CO hot spot analysis was conducted to determine whether the Project would contribute to a violation of the ambient air quality standards for CO at any local intersections.

As stated above, localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles. The *Transportation Project-Level Carbon Monoxide Protocol* (Garza et al. 1997) was followed to determine whether a CO hot spot is likely to form due to project-generated traffic. In accordance with the Protocol, CO hot spots are typically evaluated when (a) the level of service (LOS) of an intersection decreases to a LOS E or worse; (b) signalization and/or channelization is added to an intersection; and (c) sensitive receptors such as residences, commercial developments, schools, hospitals, etc. are located in the vicinity of the affected intersection. In general, CO hot spots would be anticipated near affected intersections because operation of vehicles in the vicinity of congested intersections involves vehicle stopping and idling for extended periods.

Projects involving traffic impacts may result in the formation of locally high concentrations of CO, known as CO hot spots. To verify that the Project would not cause or contribute to a violation of the CO standard, a screening evaluation of the potential for CO hot spots was conducted.

CALINE4 modeling was conducted for the intersections identified above. Modeling was conducted based on the guidance in Appendix B of the Protocol to calculate maximum predicted 1-hour CO concentrations. As recommended in the Protocol, predicted 1-hour CO concentrations were then scaled to evaluate maximum predicted 8-hour CO concentrations using the recommended scaling factor of 0.7 for urban locations.

Traffic volume inputs to the CALINE4 model were obtained from the TIA. The *Transportation Project-Level Carbon Monoxide Protocol* requires the modeler to model the top intersections based on the worst LOS, and the highest traffic volumes. Some intersections may fall into both

the highest traffic volumes and worst LOS categories. The *Transportation Project-Level Carbon Monoxide Protocol* assumed that if the selected intersections do not show an exceedance of the NAAQS, none of the other intersections will. This conclusion is based on the assumption that these intersections will have the highest CO impacts, and that any intersections with less traffic volumes and congestion will have lower ambient air quality impacts. As recommended in the Protocol, receptors were located at locations that were approximately 3 meters (10 feet) from the mixing zone, and at a height of 1.8 meters (6 feet). For conservative purposes, emission factors from the EMFAC2011 model for the year 2020 were used in the CALINE4 model (earliest year expected for full occupation of the Project site).

In accordance with the Protocol, it is also necessary to estimate future background CO concentrations in the Project vicinity to determine the potential impact plus background and evaluate the potential for CO hot spots due to the Project. The existing maximum 1-hour and 8-hour background concentrations of CO that was measured at the Escondido monitoring station of 5.6 and 3.19 ppm were used to represent future maximum background 1-hour and 8-hour CO concentrations. CO concentrations in the future may be lower as inspection and maintenance programs and more stringent emission controls are placed on vehicles.

The CALINE4 model outputs are provided in Appendix E of this report. Table 21 presents a list of the top four intersections with the worst LOS and the highest traffic volumes, and a summary of the predicted CO concentrations (impact plus background) for the intersections evaluated for the Existing plus Cumulative plus Project traffic for the affected intersections. As shown in Table 21, the predicted CO concentrations would be substantially below the 1-hour and 8-hour NAAQS and CAAQS for CO shown in Table 1 of this report. Therefore, no exceedances of the CO standard are predicted, and the Project would not cause or contribute to a violation of the air quality standard. As shown in Table 21, all impacts, when added to background CO concentrations, would be below the CAAQS for both the 1-hour and 8-hour averaging periods; therefore, the Project would not result in a significant cumulative impact for CO.

**Table 21
CO HOT SPOTS MODELING RESULTS**

Intersection	Maximum 1-hour CO Concentration plus Background (ppm) (CAAQS = 20 ppm)	Maximum 8-hour CO Concentration plus Background (ppm) (CAAQS = 9 ppm)
Existing Plus Project Plus Cumulative		
	am	pm
1. E. Barham Dr/S. Twin Oaks Valley Road	7.9	8.5
6. Auto Park Way/Mission Avenue	7.5	7.7
8. Valley Pkwy / 9 th Avenue	7.1	7.1
10. Valley Pkwy / I-15 SB Ramps	7.2	7.2
CAAQS Standard	20	20
Exceedance?	No	No

Notes:

CALINE4 dispersion model output sheets and EMFAC2007 emission factors are provided in Appendix E.

ppm = parts per million

Peak hour traffic volumes are based on the TIA prepared for the Project by LLG Engineers 2015.

Highest 3 yrs SDAPCD (2007-2011) 1-hour ambient background concentration (5.6 ppm) + 2020 modeled CO 1-hour contribution.

Highest 3 yrs SDAPCD 8-hour ambient background concentration (3.19 ppm) multiply by 1-hour/8-hour conversion factor of 0.7 and then add the 2020 modeled CO 8-hour contribution.

4.3.2.3 Mitigation Measures and Design Considerations

As discussed in Section 4.1.3, because the Project addresses several RAQS control measures and the General Plan goals that are relevant to the Project site, there are no additional measures available, short of reducing the size of the Project.

While the cumulative CO emission would be less than significant, the Project is calculated to have cumulative traffic impacts at ten intersections. The Project Applicant would pay the appropriate Transportation Impact Fee (TIF), which would mitigate the Project's cumulative impacts. The TIF Program identifies transportation facilities needed to address cumulative impacts within designate areas of the County (TIF Areas) and then provides for payment of fees to cover a project's "fair share" of the cost. TIF fees are segregated by TIF Area and are used to help fund transportation improvements within that Area. The Project is located within the San Dieguito TIF Area. The Project should pay the appropriate TIF for impacted locations identified in the TIF Program.

4.3.2.4 Significance of Impacts following Mitigation

The Project would result in a significant cumulatively considerable impact associated with conformance to the regional air quality plan because the Project, along with all other planned and reasonably foreseeable projects within the San Marcos and Escondido Subregional Area, exceed the growth projections in the SANDAG growth forecasts for the area used in the 2009 RAQS.

4.4 Impacts to Sensitive Receptors

4.4.1 Guidelines for the Determination of Significance

- Would the project expose sensitive receptors to substantial pollutant concentrations?
- Would the project place sensitive receptors near CO "hot spots" or create CO "hot spots" near sensitive receptors?
- Would project implementation result in exposure to TACs resulting in a maximum incremental cancer risk greater than 1 in 1 million without application of Toxics-Best Available Control Technology or a health HI greater than 1, and thus be deemed as having a potentially significant impact?

Air quality regulators typically define "sensitive receptors" as schools, hospitals, resident care facilities, day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. However, for the purpose of CEQA analysis, the County definition of "sensitive receptors" also includes residences (County 2007). Existing sensitive receptors within ¼ mile of the Project vicinity include several existing residence to the west, northeast, east, and southeast. There are no schools, hospitals, or other non-residence sensitive receptors within ¼ mile of the Project site. The two primary emissions of concern for impacts to sensitive receptors are CO and DPM. Figure 5 presents the location of sensitive receptors.

4.4.2 Significance of Impacts Prior to Mitigation

CO Hot Spots Analysis

The discussions and results of the CO hot spot analysis were previously mentioned in Section 4.3.2.2. As previously presented in Table 21, all CO impacts, when added to background CO concentrations, would be below the CAAQS for both the 1-hour and 8-hour averaging periods; therefore, the Project would not result in a significant impact for CO.

Construction-related Diesel Health Risk

DPM emissions would be released from the on-site construction equipment and from haul trucks associated with the Project. The CARB has declared that DPM from diesel engine exhaust is a TAC. Additionally, the OEHHA has determined that chronic exposure to DPM can cause carcinogenic and non-carcinogenic health effects.

The USEPA SCREEN3 model, the screening air dispersion modeling method approved by the CARB for such assessments was used to estimate concentrations of DPM from the construction of the Project. The DPM construction equipment emissions were estimated from emission calculation and amount to 1.78 pounds per day of DPM (as PM₁₀ exhaust). The emissions were represented in the model as an area source equal to the size of the Project's construction area (based on the number of dwelling units which is up to 25 acres for each Neighborhood area, not

including the open space areas). An emission release height of 10 feet (3 meters) was also assumed. Receptor locations where construction impacts were calculated focused on the residential receptors located west and northeast of the Project site.

Cancer Health Risk Assessment Methodology

The cancer risk is calculated by multiplying the annual average concentrations calculated using the SCREEN3 model and an inhalation exposure factor as in Equation 1 below (Office of Environmental Health Hazard Assessment 2003).

$$\text{Cancer Risk} = \text{Inhalation cancer potency factor (CPF)} \times \text{Dose-inhalation}$$

Where:

Cancer Risk = Total individual lifetime excess cancer risk defined as the cancer risk a hypothetical individual faces if exposed to carcinogenic emissions from a particular facility; this risk is defined as an excess risk because it is above and beyond the background cancer risk to the population contributed by emission sources not related to the Project; cancer risk is expressed in terms of risk per million exposed individuals.

$$\text{Dose-inhalation} = (\text{Cair} \times \text{DBR} \times \text{A} \times \text{EF} \times \text{ED}) / \text{AT}$$

Where:

Cair = annual average concentration

DBR = daily breathing rate,

A = inhalation absorption factor

EF = exposure frequency

ED = exposure duration

AT = average time period over which the exposure is averaged.

Cair is the annual average concentration at the closest receptor calculated from SCREEN3 in $\mu\text{g}/\text{m}^3$. With the worst-case meteorological condition under SCREEN3, the highest 1-hour DPM concentration value at a residential receptor located 0.2 miles from the Project site was calculated to be $0.00582 \mu\text{g}/\text{m}^3$. The SCREEN3 model outputs and screening health risk calculations are provided in Appendix F of this report. The other values listed in equations above are shown in Table 22.

Table 22 INHALATION EXPOSURE FACTOR VALUES FOR SENSITIVE/RESIDENTIAL RECEPTORS					
Receptor	CPF (mg/kg-day)-1	DBR (liters/kg-day)	EF (days/year)	ED (years)	AT (days)
Construction (DPM)	1.1	302	260	4.0	25,550

Notes:

CPF = cancer potency factor (from Office of Environmental Health Hazard Assessment 2012)

DPM = diesel particulate matter, DBR = daily breathing rate, EF = exposure frequency

ED = exposure duration (for construction, this represents the construction period of 4 years)

AT = average time period over which the exposure is averaged.

Source: Bay Area Air Quality Management District, 2012.

Applying Equations 1 and 2 with the values for the various factors shown in Table 22, the Cancer Risk is calculated as follows:

Construction Cancer Risk DPM = CDPM (average DPM concentration from SCREEN3 in $\mu\text{g}/\text{m}^3$) x 1.4 (risk per million for sensitive/residential receptors)

Non-Cancer Health Risk Characterization

Chronic Non-Cancer Impacts

Exposures to TACs such as DPM can also cause chronic (long-term) and acute (short-term) related non-cancer illnesses such as reproductive effects, respiratory effects, eye sensitivity, immune effects, kidney effects, blood effects, central nervous system, birth defects, or other adverse environmental effects. Risk characterization for non-cancer health risks is expressed as an HI. The HI is a ratio of the predicted concentration of a project's emissions to a concentration considered acceptable to public health professionals, termed the REL. When evaluating chronic non-cancer effects due to TAC exposures, a hazard quotient (HQ) is established for each individual TAC as follows and for each target organ affected by the individual TAC:

$$\text{HI} = \text{Cair} / \text{REL}$$

Where:

HI = chronic hazard index

Cair = Annual average concentration ($\mu\text{g}/\text{m}^3$)

REL = Chronic Reference Exposure Level ($\mu\text{g}/\text{m}^3$)

To evaluate the potential for adverse non-cancer health effects from simultaneous exposure to multiple TACs, the HQs for all TACs that affect the same target organ are summed yielding a hazard index (HI) as follows:

$$HI_{to} = \sum_{i=1}^n HQ_{tac}$$

Where:

HI_{to} = sum of the hazard quotients for all TACs affecting the same target organ

HQ_{tac} = hazard quotient for TAC and target organ.

OEHHA has assigned a chronic non-cancer REL of 5 $\mu\text{g}/\text{m}^3$ for DPM (OEHHA 2012). DPM has effects on the respiratory system, which accounts for essentially all of the potential chronic non-cancer hazards from DPM. Therefore, the only HI calculated was for the respiratory system.

Table 23 provides the results of the construction health risk assessment for project construction along with the County's Guidelines for Determining Significance health risk thresholds. As shown in the table, the construction emissions would not exceed the County's Guidelines for Determining Significance health risk thresholds for cancer risk and chronic non-cancer hazard.

Diesel exhaust particulate matter is known in the state of California to contain carcinogenic compounds. The risks associated with carcinogenic effects are typically evaluated based on a lifetime of chronic exposure (i.e., 24 hours per day, seven days per week, 365 days per year for 70 years). Because the Project-related construction emissions of diesel exhaust would occur for less than four years, the Proposed Project would not result in long-term chronic lifetime exposure to diesel exhaust from heavy duty diesel equipment. Therefore, air quality impacts related to exposure of sensitive receptors to substantial pollutant concentrations would be less than significant.

Table 23 CONSTRUCTION HEALTH RISK ASSESSMENT RESULTS			
Metric	Dispersion Model Estimate¹	District's Significance Threshold	Exceeds Threshold?
Cancer Risk ²	0.008 in 1 million	1 in 1 million	No
Chronic Non-Cancer Hazard Index from DPM ³	0.012	1.0	No

Source: Appendix C.

Notes:

- 1 Computed at the nearest sensitive receptor located approximately 10 meters (roughly 33 feet) west of the Project boundary
- 2 Assumes an exposure frequency of 260 days, exposure duration of 4.0 years, and an age sensitivity factor of 1 (Bay Area Air Quality Management District 2012)
- 3 Assumes a chronic DPM reference exposure level of 5 $\mu\text{g}/\text{m}^3$ (Office of Environmental Health Hazard Assessment 2012)

Operation-related Health Risk

Residential development projects do not typically generate any TAC emissions. Therefore, the operational impacts of the land use in relation to generation of TACs would be less than significant.

WTWRF treatment of influent would produce emissions of TACs during reaction or degradation. As previously mentioned in Section 4.2.2.2, the emission data for the WTWRF was obtained from the San Joaquin Valley APCD's *Fugitive Air Emission Factors and Concentration Values for Wastewater Treatment Plants* (SJVAPCD 1993). Emissions are determined by the multiplications of the wastewater flow and the concentration of the pollutant. The peak daily wastewater flow was assumed to be 0.19 mgd. The following formula was used to calculate the WTWRF emissions:

Daily Emissions (lb/day) = peak daily influent flow (gal/day) x liquid conversion factor (3.785 L/gal) x toxic influent concentration (µg/L) x unit conversion factor (10⁻⁶ g/µg) x lb/453.6 g.

The annual emissions of TACs from WTWRF are summarized in Table 24. A screening health risk assessment was prepared to analyze cancer, chronic non-cancer, and acute non-cancer health risks from the facility. The cancer risk is calculated by multiplying the annual average concentrations calculated using the SCREEN3 model and the inhalation cancer unit risk and cancer potency factors for the five identified TAC compounds (i.e., benzene, chloroform, ethyl benzene, methylene chlorine, 1,4-dichlorobenzene, and TCE) through OEHHA's Technical Support Document updated in 2011. The non-cancer chronic and acute risks are calculated by dividing the REL values to the 24-hour average concentrations for each TAC compound. The screening health risk calculations for the WTWRF are provided in Appendix G of this report. The location of maximum impact (MEI) was modeled at 400 feet from the property boundary of the WTWRF study area. At this location, the modeled cancer risk is 0.027 in 1 million, the chronic non-cancer inhalation hazard index is less than one, and the acute non-cancer inhalation hazard index is less than 1. These results are less than the SDAPCD standards discussed previously. Therefore, the increased health risks from the proposed facility would be less than significant.

Table 24
WTWRF HEALTH RISK ASSESSMENT RESULTS

Compound	Annual Average Emissions (lbs/year)	Annual Ambient Conc. (µg/m³)	Cancer Risk	Chronic Non-Cancer Risk	24-hr (Acute) Non-Cancer Risk
Ammonia	0.006934	1.49E-07	-	2.99E-10	1.87E-11
Benzene	1.34E-05	2.89E-10	3.49E-09	1.93E-12	8.90E-14
Chloroform	0.000188	4.04E-09	9.27E-09	5.39E-12	1.08E-11
Ethyl Benzene	5.21E-05	1.12E-09	1.18E-09	2.24E-13	-
Hydrogen Sulfide	0.000451	9.73E-09	-	3.89E-10	9.26E-11
1,1,1-TCA	6.14E-05	1.32E-09	-	5.29E-13	7.78E-15
Methylene Chlorine	0.000181	3.89E-09	1.64E-09	3.89E-12	1.11E-13
1,4-Dichlorobenzene	0.000108	2.32E-09	1.12E-08	1.16E-12	-
Phenol	0.000227	4.89E-09	-	9.78E-12	3.37E-13
Styrene	0.000116	2.49E-09	-	1.11E-12	4.75E-14
Toluene	0.000113	2.44E-09	-	3.26E-12	2.64E-14
TCE	6.02E-05	1.30E-09	1.10E-09	8.65E-13	-
Xylene	0.000136	2.92E-09	-	1.67E-12	5.31E-14
TOTAL	0.008641	-	0.027E-06	<1	<1

Sources: Emission factors from SJVAPCD's Fugitive Air Emission Factors and Concentration Values for Wastewater Treatment Plants (POTWS) November 1993.

OEHHHA Revised Air Toxics Hot Spots Program Technical Support Document for Unit Risk and Cancer Potency Values Updated 2011. <http://oehha.ca.gov/air/hotspots/2009/AppendixA.pdf>

OEHHHA Acute and Chronic Reference Exposure Levels (RELs) as of August 2013.

<http://oehha.ca.gov/air/allrel/html>.

Notes:

Assumed hydrogen sulfide would be controlled to 90% efficiency with scrubbers or biofilters that are part of the odor control system.

Cancer risk less than 10 in a million is considered less than significant.

Chronic and acute non-cancer risks less than 1 are considered less than significant.

4.4.3 Mitigation Measures and Design Considerations

No additional design consideration or mitigation is required.

4.4.4 Significance of Impacts following Mitigation

Impacts to sensitive receptors from TACs would be less than significant.

4.5 Odor Impacts

4.5.1 Guidelines for the Determination of Significance

Based on the County Guidelines (2007), a project would have a significant impact if it would generate objectionable odors or place sensitive receptors next to existing objectionable odors that would affect a considerable number of persons or the public.

SDAPCD Rule 51 (Public Nuisance) and California Health & Safety Code, Division 26, Part 4, Chapter 3, Section 541700, prohibits the emission of any material that causes injury, detriment, nuisance, or annoyance to a considerable number of persons or endangers the comfort, health, or safety of the public. Projects required to obtain permits from SDAPCD, typically industrial and some commercial projects, are evaluated by SDAPCD staff for potential odor nuisance and conditions may be applied (or control equipment required), where necessary, to prevent occurrence of public nuisance. Odors emanating from agricultural operations are excluded.

4.5.2 Significance of Impacts Prior to Mitigation

Project construction could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust. Diesel exhaust and VOCs will be emitted during construction of the Project, which are objectionable to some; however, emissions will disperse rapidly from the Project site and therefore should not be at a level to induce a negative response. Because the construction equipment would be operating at various locations throughout the construction site, and because any operation that would occur in the vicinity of existing receptors would be temporary, impacts associated with odors during construction are not considered significant.

According to the County's Zoning Ordinance, Section 6318, "all commercial and industrial uses shall be so operated as to not emit matter causing unpleasant odors which are perceptible by the average person at or beyond any lot line of the lot containing said uses." In general, this ordinance applies to commercial and industrial land uses following development. The residential development itself would not be a source of odor impacts. According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting activities, refineries, landfills, dairies, and fiberglass molding operations.

Odors from Equestrian Uses

Land uses typically associated with odors include wastewater treatment facilities, waste-disposal facilities, or agricultural operations. Some members of the public also associate objectionable odors with horses. Neighborhoods 3 and 5 would largely consist of wider and deeper lots in order to allow horse keeping. Private ownership of horses located on larger lots would not be considered a substantial odor source.

Additionally, the existing equestrian complex previously used in association with the Harmony Grove Equestrian Center, located in the southern portion of Neighborhood 5, would be retained, open to the public and privately maintained by the HOA. The complex is located approximately 400 feet west of the existing residences to the east of the Project site and 500 feet west of the proposed residences in Neighborhood 5. Portions of the existing equestrian training and boarding facility would accommodate private horse boarding; however, the distance to existing and planned residences is great enough such that any odors generated by the facility would sufficiently dissipate before reaching said residences. Therefore, the impact due to odors from equestrian uses on the Project site is considered to be less than significant.

Odors from WTWRF

Operation of the WTWRF has the potential to result in odor impacts because of the nature of the activities at the proposed facility. However, the frequency with which the facility would expose the public to objectionable odors would be minimal based on the control measures planned in the design. All WTWRF facilities with the exception of the wet weather pond would be covered to avoid uncontrolled odor release. Section 6318 of the San Diego County Zoning Ordinance states that “All commercial and industrial uses shall be so operated as not to emit matter causing unpleasant odors which are perceptible by the average person at or beyond any lot line of the lot containing said uses.” Additionally, Section 6318 requires that odors be diluted by “a ratio of one volume of odorous air to eight or more volumes of clean air.” Active odor control units would be located to manage gases from the wet and solids stream treatment processes. All processes and equipment would be housed (or otherwise contained) and ventilation controlled such that no objectionable odors would be discernible at the Project site boundaries.

Odors are typically associated with particular steps in the wastewater treatment process. Initially, raw wastewater is transferred to the primary clarifiers where most solids are separated from the liquid portion of wastewater in the treatment process. A ferrous chloride solution is added to the raw wastewater before it enters the primary clarifiers to reduce odors at that treatment stage. Ferrous chloride molecules capture hydrogen sulfide molecules, forming insoluble compounds that precipitate out of the waste stream.

Wastewater undergoing aerobic digestion (decomposition with free oxygen) in the aeration basins emits a characteristically musty odor due to the particular type of biogases released in the process. A misting system with odor neutralizing liquids breaks down the foul smelling chemical compounds in the biogases. Chlorine gas is used to disinfect the non-potable water, which is used daily to wash down all areas of the plant.

Bio filters remove odor by capturing the odor causing compounds in a media bed where they are oxidized by naturally occurring micro-organisms. Wastewater operators routinely check the digester pressure relief valves to make sure they are not venting to the outdoors and that the waste gas burner is performing optimally.

Facilities that cause nuisance odors are subject to enforcement action by the SDAPCD. The SDAPCD responds to odor complaints by investigating the complaint determining whether the odor violated SDAPCD Rule 51. The inspector will take enforcement action if the source is not in compliance with SDAPCD rules and regulations and will inform the complainant of investigation results. In the event of enforcement action, odor-causing impacts must be mitigated by appropriate means to reduce the impacts to sensitive receptors. Such means include shutdown of odor sources or requirements to control odors using add-on equipment.

The odor control design for the facility would be such that no perceptible odors would be detected by nearby residences or other sensitive receptors. Additionally, disposal of biosolids at landfill sites could also contribute to odors and increase air emissions at these end-use facilities. However, the County would only allow facilities that have addressed all site-specific impacts. Therefore, this impact would be less than significant.

Odors from Sewer Pump Station

The proposed sewer pump station system is designed to pump out wastewater several times per hour. The system would be equipped with two redundant pumps that would allow for backup operation of the pumps in the event that one pump is out of service. The wastewater system would also include chemical feed addition at the pump station to minimize odors. A back-up chemical injection system would be included for further odor control redundancy. Therefore, impacts from sewer pump station odors would be less than significant.

Moreover, the effects of objectionable odors would be localized to the immediate surrounding area and would not contribute to a cumulatively considerable odor. A list of past, present and future projects within the surrounding area were evaluated and none of these projects create objectionable odors.

4.5.3 Mitigation Measures and Design Considerations

Odor control measures for the WTWRF are discussed in Sections 1.3 and 4.5.2. As discussed in those sections, implementation of standard odor control measures would minimize the Project's contribution to objectionable odors. The Project would comply with SDAPCD Rule 51 and would not place sensitive receptors near existing odor sources that would affect a considerable number of persons or the public; therefore, no mitigation measures or additional design considerations are required.

4.5.4 Significance of Impacts following Mitigation

Due to the nature of the development, there are no significant odorous air emissions anticipated from normal operations at the Valiano development. Impacts associated with equestrian uses, and operation of the WTWRF and sewer pump station would be less than significant.

5.0 SUMMARY OF RECOMMENDED DESIGN FEATURES, IMPACTS, AND MITIGATION

The residential designations would provide housing opportunities for future residents in the vicinity, directly addressing the jobs/housing balance issues faced by the County and the residential land shortages identified by SANDAG in their forecasts for the region. However, because the Project would exceed the growth projections in the SANDAG growth forecasts for the San Marcos and Escondido Subregional Areas, as discussed in Section 4.1.2, the Project would result in a cumulatively considerable impact associated with Project potential interference with the RAQS.

In summary, the Project would result in the emission of air pollutants during the construction and operational phases of the Project. With the anticipated construction of the neighborhoods, it is possible that occupation of a neighborhood may occur concurrently with construction of another neighborhood. As shown in Table 16, the first scenario assumes that Neighborhoods 1 and 5 would be occupied and operating concurrent with construction activities of Neighborhoods 2 and 4 (vertical building and backbone infrastructure, respectively). Table 17 shows the combined emissions during operation of Neighborhoods 1, 2, 3, and 5 and vertical construction of Neighborhood 4. Operational emissions from the WTWRF are also included in both worst-case scenarios. The air quality impact analysis evaluated the potential for adverse impacts to the ambient air quality due to construction and operational emissions. Construction emissions would include emissions associated with fugitive dust, heavy construction equipment and construction workers commuting to and from the site.

According to the SDAPCD Rule 55 - Fugitive Dust Control, it states that no dust and/or dirt shall leave the property line, as follows:

- (1) **Airborne Dust Beyond the Property Line:** No person shall engage in construction or demolition activity subject to this rule in a manner that discharges visible dust emissions into the atmosphere beyond the property line for a period or periods aggregating more than 3 minutes in any 60-minute period.
- (2) **Track-Out/Carry-Out:** Visible roadway dust as a result of active operations, spillage from transport trucks, erosion, or track-out/carry-out shall:
 - (i) be minimized by the use of any of the following or equally effective trackout/carry-out and erosion control measures that apply to the Project or operation:
 - a. track-out grates or gravel beds at each egress point,
 - b. wheel-washing at each egress during muddy conditions, soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding; and for outbound transport trucks:
 - c. secured tarps or cargo covering, watering, or treating of transported material; and
 - (ii) be removed at the conclusion of each work day when active operations cease, or every 24 hours for continuous operations. If a street sweeper is used to remove any

track-out/carry-out, only PM₁₀-efficient street sweepers certified to meet the most current South Coast Air Quality Management District (SCAQMD) Rule 1186 requirements shall be used. The use of blowers for removal of track-out/carry-out is prohibited under any circumstances.

As previously mentioned in Section 4.2.1.3, the control measures listed below are those that the Project would incorporate for dust control as well as minimizing pollutant emissions from diesel equipment:

- A minimum of two applications of water during grading between dozer/scrapper passes.
- Paving, chip sealing or chemical stabilization of internal roadways after completion of grading.
- Use of sweepers or water trucks to remove “track-out” at any point of public street access.
- Termination of grading if winds exceed 25 mph.
- Dirt storage piles will be stabilized by chemical binders, tarps, fencing or other erosion control.
- Disturbed areas shall be hydroseeded, landscaped, or developed as quickly as possible and as directed by the County and/or SDAPCD to reduce dust generation.
- A 15-mph speed limit will be enforced on unpaved surfaces.
- On dry days, dirt and debris spilled onto paved surfaces shall be swept up immediately to reduce resuspension of particulate matter caused by vehicle movement. Approach routes to construction sites shall be cleaned daily of construction-related dirt in dry weather.
- The Project will use building products that have at least a 10 percent recycled content.
- The Project will require the construction fleet to use any combination of diesel catalytic converters, diesel oxidation catalysts, diesel particulate filters and utilize CARB/USEPA Engine Certification Tier 4, or other equivalent methods approved by the CARB.
- Use of low-VOC coatings in accordance with SDAPCD Rule 67.
- Any blasting areas will be wet down prior to initiating the blast.

The control measures listed above constitute BMPs for dust control, diesel particulate, and construction equipment emissions. With the implementation of the fugitive dust control measures as the Project design features, the phased construction impacts would be less than significant.

Construction associated with several other projects would occur in the general vicinity of the Project, and cumulative construction projects would result in a cumulatively considerable net increase in VOC, NO_x, PM₁₀ and PM_{2.5}. Impacts would remain significant even with design considerations listed above to reduce fugitive dust during construction. Project construction would therefore result in an unavoidably significant, but temporary, cumulative impact to the ambient air quality.

Operational emissions would be associated with traffic accessing the Valiano development, along with area sources such as natural gas fireplaces, energy use, and landscaping. Project emissions would be below the screening-level thresholds for VOCs, CO, PM₁₀, and PM_{2.5} and would be less than significant for air quality.

Based on the analysis presented in Section 4.1, the Project would be inconsistent with the RAQS and SIP. It was demonstrated in Section 4.2.2.2 that operational emissions would result in a less than significant impact.

Both construction-period and operational health risk effects related to TACs would be less than significant.

Odors from general Project construction and operation of the WTWRF, sewer pump stations, and equestrian uses were evaluated.

As previously mentioned in Section 4.5.2, the control measures listed below are those that the WTWRF would incorporate for odor control:

- All WTWRF facilities, including the wet weather pond, would be covered to avoid uncontrolled odor release.
- Active odor control units would be located to manage gases from the wet and solids stream treatment processes.
- All processes and equipment would be housed (or otherwise contained) and ventilation controlled such that no objectionable odors would be discernible at the Project site boundaries.
- A misting system with odor neutralizing liquids to break down the foul smelling chemical compounds in the biogases would be installed.
- Bio filters would be utilized to capture odor causing compounds in a media bed where they are oxidized by naturally occurring micro-organisms.
- Wastewater operators would routinely check the digester pressure relief valves to make sure they are not venting to the outdoors and that the waste gas burner is performing optimally.

With implementation of the above odor control measures, the Project would comply with SDAPCD Rule 51 (Public Nuisance) and odor impacts would be less than significant.

6.0 OFF-SITE WASTEWATER PIPELINE OPTIONS

The following analysis includes three potential options for the provision of sewer service, in lieu of the proposed on-site wastewater treatment and water reclamation facility (WTWRF) and related facilities. These potential options include: (1) connection to the City of Escondido Hale Avenue Resource Recovery Facility (HARRF), (2) connection to Vallecitos Water District (VWD) Facilities, and (3) connection to the Harmony Grove Treatment Plant.

Different approaches to the on-site WTWRF would include the construction of the sewer pipeline and pump stations, which would convey wastewater from the Proposed Project to an off-site wastewater treatment facility.

A summary of the construction emissions associated with the installation of the wastewater and recycled water pipelines are described in the subsection below. Construction activity is a source of dust and exhaust emissions that can have substantial temporary impacts on local air quality (i.e., exceed air quality standards for ozone, CO, PM₁₀, and PM_{2.5}). Such emissions would result from earthmoving and use of heavy equipment, as well as land clearing, ground excavation, cut-and-fill operations, and the re-paving of roadways. Emissions can vary substantially from day to day, depending on the level of activity, the specific operations, and the prevailing weather. A large portion of the total dust emissions for the pipeline installation activities would likely be caused by construction vehicles driving on unpaved and paved surface areas and excavating and refilling soil materials.

Emissions from the construction activities of the sewer and recycled water pipeline installation activities were estimated using the Sacramento Metropolitan Air Quality Management District's (SMAQMD's) Road Construction Model. The model contains emission factors based on the CARB OFFROAD 2011 that were used to calculate construction equipment emissions. Heavy construction equipment requirements and associated emissions for land clearing, ground excavation, cut-and-fill operations, and re-paving activities were estimated based on the Road Construction Model default values and professional judgment. Emissions associated with worker travel to the construction site and construction truck deliveries were estimated based on default values in the model.

6.1 Option 1: Connection to the City of Escondido Hale Avenue Resource Recovery Facility (HARRF)

This option would require an out-of-services-agreement between the City of Escondido and County of San Diego. The construction pipeline activities would involve the following off-site activities:

1. Installation of approximately 2,700 linear feet of new sewer main from the new lift station 12 on the Project site to an existing City pump station, with these facilities to be located within existing City of Escondido and County of San Diego streets. This line will be owned and operated by the City of Escondido.

2. Installation of approximately 1,600 linear feet of new force main pipeline from the Project site to an existing City sewer line, with the new facilities to be located within an existing San Diego Gas & Electric (SDG&E) easement. This line will be owned and operated by the City of Escondido.
3. Abandonment of approximately 1,600 linear feet of existing sewer force main located in an existing Escondido easement. The abandonment of the force main is anticipated to be slurry fill of the line; force main removal is not anticipated.
4. Installation of approximately 200 linear feet of new recycled water pipeline from the proposed Rincon Del Diablo Municipal Water District (Rincon MWD) Reclaimed Water (RW) Pipeline, to be constructed as part of the Harmony Grove Village development, to the Project site, with the new facilities to be located within Escondido streets. This line will be owned and operated by the Rincon MWD. The Rincon MWD's existing RW system will convey RW from HARRF to the vicinity of Country Club Drive and the SDG&E easement.

Reclaimed water from HARRF can also be stored in the Wet Weather Storage on the Project site through the existing off-site RW system and the proposed RW backbone system through the Project. This will allow the City to reduce peak wet weather impacts on the City's land outfall. The backbone RW system will include a pipeline through the main arterial street in the northern portion of the Project, then, east in Mt. Whitney Road, south on Country Club Drive to the connection with the existing RW system in the vicinity of the SDG&E easement and the new lift station 12.

5. Installation of approximately 1,000 linear feet of a new sewer return line from the Wet Weather Storage to the new gravity sewer main in Country Club Drive as identified in Item 1 above. This line will be within existing County streets and will be owned and operated by the City of Escondido.

6.2 Option 2: Connection to Vallecitos Water District (VWD) Facilities (via annexation into the VWD for sewer service only)

This potential option would involve the installation of approximately 3,400 linear feet of new force main from the Project site to an existing VWD pipeline. This would require four on-site pump stations. One sewer lift station will be private and owned and operated by the Valiano HOA. The three larger lift stations will be owned and operated by the VWD and will have back-up generators. The on-site sewer system will be owned and operated by VWD.

Existing VWD pipelines would need to be upgraded as follows:

- Approximately 3,200 linear feet of pipeline through the mobile home park and on Barham Drive
- Approximately 500 linear feet of pipeline under SR-78 from Barham Drive to Rancheros Drive

Additional facilities that may require upgrading have been identified in the VWD *Water, Wastewater and Recycled Water Master Plan* (November 2010) and may be required as a condition of development by VWD or contribution through annexation and connection fees. The VWD *Water, Wastewater, and Recycled Water Master Plan Final Program EIR SCH No. 2010071073* (March 2011) includes the following capital improvement projects that are not included in the emission analysis for this Project:

- SP-2 – replace 3,200 linear feet of 21-inch sewer with 39-inch sewer
- SP-11 – replace 1,400 linear feet of 21-inch sewer with 36-inch, and install 800 linear feet of 8-inch sewer
- SP-12 – replace 2,000 linear feet of 21-inch sewer with 36-inch
- Possible improvements to the Land Outfall

6.3 Option 3: Connection to the Harmony Grove Water Reclamation Facility (expansion of the County Harmony Grove Sewer Service Area)

This option involves: (1) the installation of approximately 5,100 linear feet of force main from the Project Sewer Lift Station site to the Harmony Grove water reclamation facility, with these facilities to be located within existing Escondido/County streets; and (2) the construction of a new pump station and backup power generator at the Valiano Sewer Lift Station site. The County would own and operate the sewer lift station.

This option would require working with the County on modifications to the WRF design criteria and potentially re-rating the design flow at the WRF to include the Project's sewer flows.

6.4 Off-site Wastewater Pipeline Emissions

Though each of the three off-site wastewater pipeline options varies in the length of pipeline laid and support structures built, each option would require similar types of construction equipment and daily disturbance limits due to the similar nature of construction activity required. Therefore, the maximum daily emissions for each of the three options were estimated to be the same. Table 25 provides a summary of the maximum daily construction emission estimates during the pipeline construction period.

Table 25
ESTIMATED 2016 WORST-CASE
PIPELINE CONSTRUCTION EMISSIONS

Activities	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
	lbs/day					
Pipeline Construction	11	109	53	<1	6	5

Notes:

1. Highest emission value is shown here.
2. USEPA Tier 4 off-Road equipment and diesel particulate filters were assumed to be utilized.
3. Fugitive dust measures were applied to control PM₁₀ and PM_{2.5} dust emissions.

Table 26 provides the summaries of the maximum daily construction emission estimates during each construction activity overlap for construction year 2016. As noted above, it was assumed that dust control measures (watering a minimum of two times daily) would be employed to reduce emissions of fugitive dust during site grading. The maximum daily emissions are compared to the daily emission thresholds to determine significance.

Table 26
ESTIMATED 2016 WORST-CASE CONSTRUCTION EMISSIONS) –
BY OVERLAPPING CONSTRUCTION ACTIVITIES

Overlapping Construction Activities	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
	lbs/day					
Overlap 1						
Grading (N 1 & 5)	1	3	36	<1	9	5
Daily Maximum Total	1	3	36	<1	9	5
Overlap 2						
Grading (N 2)	1	3	36	<1	8	5
Drilling and Blasting (N 2)	<1	21	84	3	2	<1
Backbone Infrastructure (N 1 & 5)	1	2	23	<1	<1	<1
Off-site Pipeline Construction	11	109	53	<1	6	5
Daily Maximum Total	12	135	196	3	17	10
Overlap 3						
Backbone Infrastructure (N 1 & 5)	1	2	23	<1	<1	<1
Off-site Pipeline Construction	11	109	53	<1	6	5
Daily Maximum Total	11	110	76	<1	6	5

Table 26 (cont.)
ESTIMATED 2016 WORST-CASE CONSTRUCTION EMISSIONS) –
BY OVERLAPPING CONSTRUCTION ACTIVITIES

Overlapping Construction Activities	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
	lbs/day					
Overlap 4						
Off-site Pipeline Construction	11	109	53	<1	6	5
Vertical Building (N 1 & 5)	2	9	77	<1	1	<1
Daily Maximum Total	13	118	130	<1	7	6
Significant Thresholds	75	250	550	250	100	55
Exceedance?	No	No	No	No	No	No

Notes:

1. Emissions were calculated for both summer and winter months, and the highest value is shown here.
2. USEPA Tier 4 off-Road equipment and diesel particulate filters were assumed to be utilized.
3. Fugitive dust measures were applied to control PM₁₀ and PM_{2.5} dust emissions.
4. N= Neighborhood

Because emissions of all criteria pollutants during construction would be below the daily thresholds, construction would, therefore, not conflict with the NAAQS or CAAQS, and the construction impact is less than significant.

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8.0 LIST OF PREPARERS AND PERSONS AND ORGANIZATIONS CONTACTED

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Appendix A

CALEEMOD CONSTRUCTION EMISSION DATA



Valiano - Grading (Phase 1 - N 1 & 5)
San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0
Single Family Housing	165.00	Dwelling Unit	53.57	297,000.00	472

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Phasing obtained from applicant.

Off-road Equipment -

Off-road Equipment -

Grading -

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Landscape Equipment - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, Level 2 DPF, and 15% oxidation catalyst

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Architectural Coating -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	DPF	No Change	Level 2

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	110.00	74.00
tblConstructionPhase	NumDays	40.00	29.00
tblConstructionPhase	PhaseEndDate	5/26/2016	5/29/2016
tblConstructionPhase	PhaseEndDate	2/12/2016	2/13/2016
tblConstructionPhase	PhaseStartDate	2/14/2016	2/16/2016
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00

tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	84.70	0.00
tblFireplaces	NumberWood	53.90	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.09	0.00
tblSolidWaste	SolidWasteGenerationRate	180.40	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	10,033,719.95	0.00
tblWater	OutdoorWaterUseRate	1,191,481.35	0.00
tblWater	OutdoorWaterUseRate	6,325,606.05	0.00
tblWoodstoves	NumberCatalytic	7.70	0.00
tblWoodstoves	NumberNoncatalytic	7.70	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2016	6.5494	74.8958	50.0322	0.0638	18.8371	3.5855	21.7769	10.3123	3.2986	13.0169	0.0000	6,588.687 1	6,588.687 1	1.9437	0.0000	6,629.504 6
Total	6.5494	74.8958	50.0322	0.0638	18.8371	3.5855	21.7769	10.3123	3.2986	13.0169	0.0000	6,588.687 1	6,588.687 1	1.9437	0.0000	6,629.504 6

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					
2016	0.8263	2.8682	35.6735	0.0638	8.5580	0.0517	8.5909	4.6621	0.0516	4.6949	0.0000	6,588.6871	6,588.6871	1.9437	0.0000	6,629.5046
Total	0.8263	2.8682	35.6735	0.0638	8.5580	0.0517	8.5909	4.6621	0.0516	4.6949	0.0000	6,588.6871	6,588.6871	1.9437	0.0000	6,629.5046

	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
Percent Reduction	87.38	96.17	28.70	0.00	54.57	98.56	60.55	54.79	98.44	63.93	0.00	0.00	0.00	0.00	0.00	0.00

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	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.4159	0.1580	13.6581	7.2000e-004	0.0000	0.0751	0.0751	0.0000	0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

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	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.4159	0.1580	13.6581	7.2000e-004	0.0000	0.0751	0.0751	0.0000	0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/5/2016	2/13/2016	5	29	
2	Grading	Grading	2/16/2016	5/29/2016	5	74	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2016

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					18.6892	0.0000	18.6892	10.2731	0.0000	10.2731			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036		4,065.005 3	4,065.005 3	1.2262		4,090.754 4
Total	5.0771	54.6323	41.1053	0.0391	18.6892	2.9387	21.6279	10.2731	2.7036	12.9767		4,065.005 3	4,065.005 3	1.2262		4,090.754 4

3.2 Site Preparation - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0629	0.0738	0.8053	1.8700e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		156.3358	156.3358	7.8300e-003		156.5002
Total	0.0629	0.0738	0.8053	1.8700e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		156.3358	156.3358	7.8300e-003		156.5002

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					8.4102	0.0000	8.4102	4.6229	0.0000	4.6229			0.0000			0.0000
Off-Road	0.4757	1.7523	21.2415	0.0391		0.0317	0.0317		0.0317	0.0317	0.0000	4,065.0053	4,065.0053	1.2262		4,090.7544
Total	0.4757	1.7523	21.2415	0.0391	8.4102	0.0317	8.4419	4.6229	0.0317	4.6546	0.0000	4,065.0053	4,065.0053	1.2262		4,090.7544

3.2 Site Preparation - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0629	0.0738	0.8053	1.8700e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		156.3358	156.3358	7.8300e-003		156.5002
Total	0.0629	0.0738	0.8053	1.8700e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		156.3358	156.3358	7.8300e-003		156.5002

3.3 Grading - 2016**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					8.7905	0.0000	8.7905	3.6451	0.0000	3.6451			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.9807	6,414.9807	1.9350		6,455.6154
Total	6.4795	74.8137	49.1374	0.0617	8.7905	3.5842	12.3748	3.6451	3.2975	6.9426		6,414.9807	6,414.9807	1.9350		6,455.6154

3.3 Grading - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0699	0.0820	0.8948	2.0800e-003	0.1643	1.2300e-003	0.1655	0.0436	1.1300e-003	0.0447		173.7064	173.7064	8.7000e-003		173.8892
Total	0.0699	0.0820	0.8948	2.0800e-003	0.1643	1.2300e-003	0.1655	0.0436	1.1300e-003	0.0447		173.7064	173.7064	8.7000e-003		173.8892

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					3.9557	0.0000	3.9557	1.6403	0.0000	1.6403			0.0000			0.0000
Off-Road	0.7564	2.7861	34.7787	0.0617		0.0504	0.0504		0.0504	0.0504	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154
Total	0.7564	2.7861	34.7787	0.0617	3.9557	0.0504	4.0062	1.6403	0.0504	1.6907	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154

3.3 Grading - 2016

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0699	0.0820	0.8948	2.0800e-003	0.1643	1.2300e-003	0.1655	0.0436	1.1300e-003	0.0447		173.7064	173.7064	8.7000e-003		173.8892
Total	0.0699	0.0820	0.8948	2.0800e-003	0.1643	1.2300e-003	0.1655	0.0436	1.1300e-003	0.0447		173.7064	173.7064	8.7000e-003		173.8892

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.509376	0.073655	0.192210	0.135105	0.037177	0.005354	0.012300	0.020284	0.001820	0.002092	0.006537	0.000620	0.003469

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133
Unmitigated	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751		24.5114	24.5114	0.0239		25.0133
Total	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751		24.5114	24.5114	0.0239		25.0133
Total	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

7.0 Water Detail

7.1 Mitigation Measures Water**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

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

Valiano - Grading (Phase 1 - N 1 & 5)
San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0
Single Family Housing	165.00	Dwelling Unit	53.57	297,000.00	472

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Phasing obtained from applicant.

Off-road Equipment -

Off-road Equipment -

Grading -

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Landscape Equipment - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, Level 2 DPF, and 15% oxidation catalyst

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Architectural Coating -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	DPF	No Change	Level 2

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	110.00	74.00
tblConstructionPhase	NumDays	40.00	29.00
tblConstructionPhase	PhaseEndDate	5/26/2016	5/29/2016
tblConstructionPhase	PhaseEndDate	2/12/2016	2/13/2016
tblConstructionPhase	PhaseStartDate	2/14/2016	2/16/2016
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00

tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	84.70	0.00
tblFireplaces	NumberWood	53.90	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.09	0.00
tblSolidWaste	SolidWasteGenerationRate	180.40	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	10,033,719.95	0.00
tblWater	OutdoorWaterUseRate	1,191,481.35	0.00
tblWater	OutdoorWaterUseRate	6,325,606.05	0.00
tblWoodstoves	NumberCatalytic	7.70	0.00
tblWoodstoves	NumberNoncatalytic	7.70	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2016	6.5536	74.9058	50.0067	0.0637	18.8371	3.5855	21.7769	10.3123	3.2986	13.0169	0.0000	6,578.1150	6,578.1150	1.9437	0.0000	6,618.9325
Total	6.5536	74.9058	50.0067	0.0637	18.8371	3.5855	21.7769	10.3123	3.2986	13.0169	0.0000	6,578.1150	6,578.1150	1.9437	0.0000	6,618.9325

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					
2016	0.8305	2.8782	35.6480	0.0637	8.5580	0.0517	8.5909	4.6621	0.0516	4.6949	0.0000	6,578.1150	6,578.1150	1.9437	0.0000	6,618.9325
Total	0.8305	2.8782	35.6480	0.0637	8.5580	0.0517	8.5909	4.6621	0.0516	4.6949	0.0000	6,578.1150	6,578.1150	1.9437	0.0000	6,618.9325

	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
Percent Reduction	87.33	96.16	28.71	0.00	54.57	98.56	60.55	54.79	98.44	63.93	0.00	0.00	0.00	0.00	0.00	0.00

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	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.4159	0.1580	13.6581	7.2000e-004	0.0000	0.0751	0.0751	0.0000	0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

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	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.4159	0.1580	13.6581	7.2000e-004	0.0000	0.0751	0.0751	0.0000	0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/5/2016	2/13/2016	5	29	
2	Grading	Grading	2/16/2016	5/29/2016	5	74	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2016

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					18.6892	0.0000	18.6892	10.2731	0.0000	10.2731			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036		4,065.005 3	4,065.005 3	1.2262		4,090.754 4
Total	5.0771	54.6323	41.1053	0.0391	18.6892	2.9387	21.6279	10.2731	2.7036	12.9767		4,065.005 3	4,065.005 3	1.2262		4,090.754 4

3.2 Site Preparation - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0667	0.0829	0.7823	1.7600e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		146.8209	146.8209	7.8300e-003		146.9854
Total	0.0667	0.0829	0.7823	1.7600e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		146.8209	146.8209	7.8300e-003		146.9854

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					8.4102	0.0000	8.4102	4.6229	0.0000	4.6229			0.0000			0.0000
Off-Road	0.4757	1.7523	21.2415	0.0391		0.0317	0.0317		0.0317	0.0317	0.0000	4,065.0053	4,065.0053	1.2262		4,090.7544
Total	0.4757	1.7523	21.2415	0.0391	8.4102	0.0317	8.4419	4.6229	0.0317	4.6546	0.0000	4,065.0053	4,065.0053	1.2262		4,090.7544

3.2 Site Preparation - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0667	0.0829	0.7823	1.7600e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		146.8209	146.8209	7.8300e-003		146.9854
Total	0.0667	0.0829	0.7823	1.7600e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		146.8209	146.8209	7.8300e-003		146.9854

3.3 Grading - 2016**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					8.7905	0.0000	8.7905	3.6451	0.0000	3.6451			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.9807	6,414.9807	1.9350		6,455.6154
Total	6.4795	74.8137	49.1374	0.0617	8.7905	3.5842	12.3748	3.6451	3.2975	6.9426		6,414.9807	6,414.9807	1.9350		6,455.6154

3.3 Grading - 2016

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0741	0.0921	0.8693	1.9500e-003	0.1643	1.2300e-003	0.1655	0.0436	1.1300e-003	0.0447		163.1343	163.1343	8.7000e-003		163.3171
Total	0.0741	0.0921	0.8693	1.9500e-003	0.1643	1.2300e-003	0.1655	0.0436	1.1300e-003	0.0447		163.1343	163.1343	8.7000e-003		163.3171

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					3.9557	0.0000	3.9557	1.6403	0.0000	1.6403			0.0000			0.0000
Off-Road	0.7564	2.7861	34.7787	0.0617		0.0504	0.0504		0.0504	0.0504	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154
Total	0.7564	2.7861	34.7787	0.0617	3.9557	0.0504	4.0062	1.6403	0.0504	1.6907	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154

3.3 Grading - 2016

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0741	0.0921	0.8693	1.9500e-003	0.1643	1.2300e-003	0.1655	0.0436	1.1300e-003	0.0447		163.1343	163.1343	8.7000e-003		163.3171
Total	0.0741	0.0921	0.8693	1.9500e-003	0.1643	1.2300e-003	0.1655	0.0436	1.1300e-003	0.0447		163.1343	163.1343	8.7000e-003		163.3171

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.509376	0.073655	0.192210	0.135105	0.037177	0.005354	0.012300	0.020284	0.001820	0.002092	0.006537	0.000620	0.003469

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133
Unmitigated	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751		24.5114	24.5114	0.0239		25.0133
Total	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751		24.5114	24.5114	0.0239		25.0133
Total	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

7.0 Water Detail

7.1 Mitigation Measures Water**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

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

Valiano - Grading (Phase 1 - N 1 & 5)**San Diego County, Mitigation Report****Construction Mitigation Summary**

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Grading	0.87	0.96	0.29	0.00	0.99	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.90	0.97	0.47	0.00	0.99	0.99	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Excavators	Diesel	Tier 4 Final	2	2	Level 2	15.00
Graders	Diesel	Tier 4 Final	1	1	Level 2	15.00
Rubber Tired Dozers	Diesel	Tier 4 Final	4	4	Level 2	15.00
Scrapers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	6	6	Level 2	15.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					
Excavators	2.87300E-002	3.27880E-001	2.53700E-001	3.90000E-004	1.61300E-002	1.48400E-002	0.00000E+000	3.69169E+001	3.69169E+001	1.11400E-002	0.00000E+000	3.71508E+001
Graders	3.76900E-002	3.84060E-001	1.82320E-001	2.30000E-004	2.15800E-002	1.98500E-002	0.00000E+000	2.17979E+001	2.17979E+001	6.58000E-003	0.00000E+000	2.19360E+001
Rubber Tired Dozers	9.96800E-002	1.11659E+000	8.44040E-001	7.10000E-004	5.19500E-002	4.78000E-002	0.00000E+000	6.74367E+001	6.74367E+001	2.03400E-002	0.00000E+000	6.78639E+001
Scrapers	1.02300E-001	1.30208E+000	8.15590E-001	1.10000E-003	5.24800E-002	4.82800E-002	0.00000E+000	1.03885E+002	1.03885E+002	3.13400E-002	0.00000E+000	1.04543E+002
Tractors/Loaders/Backhoes	4.49600E-002	4.29670E-001	3.18470E-001	4.10000E-004	3.30800E-002	3.04400E-002	0.00000E+000	3.87598E+001	3.87598E+001	1.16900E-002	0.00000E+000	3.90054E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					
Excavators	4.82000E-003	1.77600E-002	2.97270E-001	3.90000E-004	3.20000E-004	3.20000E-004	0.00000E+000	3.69169E+001	3.69169E+001	1.11400E-002	0.00000E+000	3.71507E+001
Graders	2.79000E-003	1.02900E-002	1.72250E-001	2.30000E-004	1.90000E-004	1.90000E-004	0.00000E+000	2.17979E+001	2.17979E+001	6.58000E-003	0.00000E+000	2.19359E+001
Rubber Tired Dozers	8.69000E-003	3.20000E-002	3.18600E-001	7.10000E-004	5.80000E-004	5.80000E-004	0.00000E+000	6.74367E+001	6.74367E+001	2.03400E-002	0.00000E+000	6.78638E+001
Scrapers	1.35700E-002	4.99800E-002	4.97540E-001	1.10000E-003	9.00000E-004	9.00000E-004	0.00000E+000	1.03884E+002	1.03884E+002	3.13400E-002	0.00000E+000	1.04543E+002
Tractors/Loaders/Backhoes	5.01000E-003	1.84700E-002	3.09150E-001	4.10000E-004	3.30000E-004	3.30000E-004	0.00000E+000	3.87598E+001	3.87598E+001	1.16900E-002	0.00000E+000	3.90053E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Excavators	8.32231E-001	9.45834E-001	-1.71738E-001	0.00000E+000	9.80161E-001	9.78437E-001	0.00000E+000	1.08351E-006	1.08351E-006	0.00000E+000	0.00000E+000	1.34587E-006
Graders	9.25975E-001	9.73207E-001	5.52326E-002	0.00000E+000	9.91196E-001	9.90428E-001	0.00000E+000	1.37628E-006	1.37628E-006	0.00000E+000	0.00000E+000	9.11745E-007
Rubber Tired Dozers	9.12821E-001	9.71341E-001	6.22530E-001	0.00000E+000	9.88835E-001	9.87866E-001	0.00000E+000	1.18630E-006	1.18630E-006	0.00000E+000	0.00000E+000	1.17883E-006
Scrapers	8.67351E-001	9.61615E-001	3.89963E-001	0.00000E+000	9.82851E-001	9.81359E-001	0.00000E+000	1.25139E-006	1.25139E-006	0.00000E+000	0.00000E+000	1.24351E-006
Tractors/Loaders/Backhoes	8.88568E-001	9.57014E-001	2.92649E-002	0.00000E+000	9.90024E-001	9.89159E-001	0.00000E+000	1.03200E-006	1.03200E-006	0.00000E+000	0.00000E+000	1.28188E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input	Mitigation Input	Mitigation Input			
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	0.00		
Yes	Clean Paved Road	% PM Reduction	0.00				

Phase	Source	Unmitigated		Mitigated		Percent Reduction	
		PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Grading	Fugitive Dust	0.33	0.13	0.15	0.06	0.55	0.55
Grading	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.27	0.15	0.12	0.07	0.55	0.55
Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	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
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting: Low Density Suburban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00	0.00	0.00	
No	Land Use	Increase Diversity	0.10	0.32		
No	Land Use	Improve Walkability Design	0.00	0.00		
No	Land Use	Improve Destination Accessibility	0.00	0.00		
No	Land Use	Increase Transit Accessibility	0.25	0.00		
No	Land Use	Integrate Below Market Rate Housing	0.00	0.00		
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network			
No	Neighborhood Enhancements	Provide Traffic Calming Measures			
No	Neighborhood Enhancements	Implement NEV Network	0.00		
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00		
No	Parking Policy Pricing	Limit Parking Supply	0.00	0.00	
No	Parking Policy Pricing	Unbundle Parking Costs	0.00	0.00	
No	Parking Policy Pricing	On-street Market Pricing	0.00	0.00	
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00		
No	Transit Improvements	Provide BRT System	0.00	0.00	
No	Transit Improvements	Expand Transit Network	0.00	0.00	
No	Transit Improvements	Increase Transit Frequency	0.00		0.00
	Transit Improvements	Transit Improvements Subtotal	0.00		
		Land Use and Site Enhancement Subtotal	0.00		
No	Commute	Implement Trip Reduction Program			
No	Commute	Transit Subsidy			
No	Commute	Implement Employee Parking "Cash Out"	3.00		
No	Commute	Workplace Parking Charge		0.00	
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00		
No	Commute	Market Commute Trip Reduction Option	0.00		
No	Commute	Employee Vanpool/Shuttle	0.00		2.00
No	Commute	Provide Ride Sharing Program	5.00		
	Commute	Commute Subtotal	0.00		

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	250.00
No	Use Low VOC Paint (Residential Exterior)	250.00
No	Use Low VOC Paint (Non-residential Interior)	250.00
No	Use Low VOC Paint (Non-residential Exterior)	250.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher	15.00
Fan	50.00
Refrigerator	15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy	0.00	0.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape	0.00	0.00

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

Valiano - Grading (Phase 2 - N 2)
San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	58.00	Dwelling Unit	18.83	104,400.00	166

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase -

Off-road Equipment -

Off-road Equipment -

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, level 2 DPF, and 15% oxidation catalyst.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Landscape Equipment -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Residential_Exterior	42525	63180
tblAreaCoating	Area_Residential_Interior	127575	189540
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	DPF	No Change	Level 2

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	8/19/2016	8/21/2016
tblConstructionPhase	PhaseEndDate	7/8/2016	7/10/2016
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	19.25	0.00

tblFireplaces	NumberWood	12.25	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	41.00	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	2,280,390.90	0.00
tblWater	OutdoorWaterUseRate	1,437,637.74	0.00
tblWoodstoves	NumberCatalytic	1.75	0.00
tblWoodstoves	NumberNoncatalytic	1.75	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2016	6.5494	74.8958	50.0322	0.0638	18.2141	3.5855	21.1539	9.9699	3.2986	12.6745	0.0000	6,588.6871	6,588.6871	1.9437	0.0000	6,629.5046
Total	6.5494	74.8958	50.0322	0.0638	18.2141	3.5855	21.1539	9.9699	3.2986	12.6745	0.0000	6,588.6871	6,588.6871	1.9437	0.0000	6,629.5046

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					
2016	0.8263	2.8682	35.6735	0.0638	8.2777	0.0517	8.3105	4.5080	0.0516	4.5408	0.0000	6,588.6871	6,588.6871	1.9437	0.0000	6,629.5046
Total	0.8263	2.8682	35.6735	0.0638	8.2777	0.0517	8.3105	4.5080	0.0516	4.5408	0.0000	6,588.6871	6,588.6871	1.9437	0.0000	6,629.5046

	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
Percent Reduction	87.38	96.17	28.70	0.00	54.55	98.56	60.71	54.78	98.44	64.17	0.00	0.00	0.00	0.00	0.00	0.00

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	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1462	0.0555	4.8010	2.5000e-004	0.0000	0.0264	0.0264	0.0000	0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925

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	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1462	0.0555	4.8010	2.5000e-004	0.0000	0.0264	0.0264	0.0000	0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/27/2016	7/10/2016	5	10	
2	Grading	Grading	7/11/2016	8/21/2016	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2016

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036		4,065.005 3	4,065.005 3	1.2262		4,090.754 4
Total	5.0771	54.6323	41.1053	0.0391	18.0663	2.9387	21.0049	9.9307	2.7036	12.6343		4,065.005 3	4,065.005 3	1.2262		4,090.754 4

3.2 Site Preparation - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0629	0.0738	0.8053	1.8700e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		156.3358	156.3358	7.8300e-003		156.5002
Total	0.0629	0.0738	0.8053	1.8700e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		156.3358	156.3358	7.8300e-003		156.5002

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					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	0.4757	1.7523	21.2415	0.0391		0.0317	0.0317		0.0317	0.0317	0.0000	4,065.0053	4,065.0053	1.2262		4,090.7544
Total	0.4757	1.7523	21.2415	0.0391	8.1298	0.0317	8.1615	4.4688	0.0317	4.5005	0.0000	4,065.0053	4,065.0053	1.2262		4,090.7544

3.2 Site Preparation - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0629	0.0738	0.8053	1.8700e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		156.3358	156.3358	7.8300e-003		156.5002
Total	0.0629	0.0738	0.8053	1.8700e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		156.3358	156.3358	7.8300e-003		156.5002

3.3 Grading - 2016**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					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.9807	6,414.9807	1.9350		6,455.6154
Total	6.4795	74.8137	49.1374	0.0617	8.6733	3.5842	12.2576	3.5965	3.2975	6.8940		6,414.9807	6,414.9807	1.9350		6,455.6154

3.3 Grading - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0699	0.0820	0.8948	2.0800e-003	0.1643	1.2300e-003	0.1655	0.0436	1.1300e-003	0.0447		173.7064	173.7064	8.7000e-003		173.8892
Total	0.0699	0.0820	0.8948	2.0800e-003	0.1643	1.2300e-003	0.1655	0.0436	1.1300e-003	0.0447		173.7064	173.7064	8.7000e-003		173.8892

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					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	0.7564	2.7861	34.7787	0.0617		0.0504	0.0504		0.0504	0.0504	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154
Total	0.7564	2.7861	34.7787	0.0617	3.9030	0.0504	3.9534	1.6184	0.0504	1.6689	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154

3.3 Grading - 2016

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0699	0.0820	0.8948	2.0800e-003	0.1643	1.2300e-003	0.1655	0.0436	1.1300e-003	0.0447		173.7064	173.7064	8.7000e-003		173.8892
Total	0.0699	0.0820	0.8948	2.0800e-003	0.1643	1.2300e-003	0.1655	0.0436	1.1300e-003	0.0447		173.7064	173.7064	8.7000e-003		173.8892

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925
Unmitigated	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264		8.6160	8.6160	8.4000e-003		8.7925
Total	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264		8.6160	8.6160	8.4000e-003		8.7925
Total	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

Valiano - Grading (Phase 2 - N 2)
San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	58.00	Dwelling Unit	18.83	104,400.00	166

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase -

Off-road Equipment -

Off-road Equipment -

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, level 2 DPF, and 15% oxidation catalyst.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Landscape Equipment -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Residential_Exterior	42525	63180
tblAreaCoating	Area_Residential_Interior	127575	189540
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	DPF	No Change	Level 2

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	8/19/2016	8/21/2016
tblConstructionPhase	PhaseEndDate	7/8/2016	7/10/2016
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	19.25	0.00

tblFireplaces	NumberWood	12.25	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	41.00	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	2,280,390.90	0.00
tblWater	OutdoorWaterUseRate	1,437,637.74	0.00
tblWoodstoves	NumberCatalytic	1.75	0.00
tblWoodstoves	NumberNoncatalytic	1.75	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2016	6.5536	74.9058	50.0067	0.0637	18.2141	3.5855	21.1539	9.9699	3.2986	12.6745	0.0000	6,578.1150	6,578.1150	1.9437	0.0000	6,618.9325
Total	6.5536	74.9058	50.0067	0.0637	18.2141	3.5855	21.1539	9.9699	3.2986	12.6745	0.0000	6,578.1150	6,578.1150	1.9437	0.0000	6,618.9325

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					
2016	0.8305	2.8782	35.6480	0.0637	8.2777	0.0517	8.3105	4.5080	0.0516	4.5408	0.0000	6,578.1150	6,578.1150	1.9437	0.0000	6,618.9325
Total	0.8305	2.8782	35.6480	0.0637	8.2777	0.0517	8.3105	4.5080	0.0516	4.5408	0.0000	6,578.1150	6,578.1150	1.9437	0.0000	6,618.9325

	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
Percent Reduction	87.33	96.16	28.71	0.00	54.55	98.56	60.71	54.78	98.44	64.17	0.00	0.00	0.00	0.00	0.00	0.00

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	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1462	0.0555	4.8010	2.5000e-004	0.0000	0.0264	0.0264	0.0000	0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925

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	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1462	0.0555	4.8010	2.5000e-004	0.0000	0.0264	0.0264	0.0000	0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/27/2016	7/10/2016	5	10	
2	Grading	Grading	7/11/2016	8/21/2016	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2016

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036		4,065.005 3	4,065.005 3	1.2262		4,090.754 4
Total	5.0771	54.6323	41.1053	0.0391	18.0663	2.9387	21.0049	9.9307	2.7036	12.6343		4,065.005 3	4,065.005 3	1.2262		4,090.754 4

3.2 Site Preparation - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0667	0.0829	0.7823	1.7600e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		146.8209	146.8209	7.8300e-003		146.9854
Total	0.0667	0.0829	0.7823	1.7600e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		146.8209	146.8209	7.8300e-003		146.9854

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					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	0.4757	1.7523	21.2415	0.0391		0.0317	0.0317		0.0317	0.0317	0.0000	4,065.0053	4,065.0053	1.2262		4,090.7544
Total	0.4757	1.7523	21.2415	0.0391	8.1298	0.0317	8.1615	4.4688	0.0317	4.5005	0.0000	4,065.0053	4,065.0053	1.2262		4,090.7544

3.2 Site Preparation - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0667	0.0829	0.7823	1.7600e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		146.8209	146.8209	7.8300e-003		146.9854
Total	0.0667	0.0829	0.7823	1.7600e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		146.8209	146.8209	7.8300e-003		146.9854

3.3 Grading - 2016**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					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.9807	6,414.9807	1.9350		6,455.6154
Total	6.4795	74.8137	49.1374	0.0617	8.6733	3.5842	12.2576	3.5965	3.2975	6.8940		6,414.9807	6,414.9807	1.9350		6,455.6154

3.3 Grading - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0741	0.0921	0.8693	1.9500e-003	0.1643	1.2300e-003	0.1655	0.0436	1.1300e-003	0.0447		163.1343	163.1343	8.7000e-003		163.3171
Total	0.0741	0.0921	0.8693	1.9500e-003	0.1643	1.2300e-003	0.1655	0.0436	1.1300e-003	0.0447		163.1343	163.1343	8.7000e-003		163.3171

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					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	0.7564	2.7861	34.7787	0.0617		0.0504	0.0504		0.0504	0.0504	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154
Total	0.7564	2.7861	34.7787	0.0617	3.9030	0.0504	3.9534	1.6184	0.0504	1.6689	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154

3.3 Grading - 2016

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0741	0.0921	0.8693	1.9500e-003	0.1643	1.2300e-003	0.1655	0.0436	1.1300e-003	0.0447		163.1343	163.1343	8.7000e-003		163.3171
Total	0.0741	0.0921	0.8693	1.9500e-003	0.1643	1.2300e-003	0.1655	0.0436	1.1300e-003	0.0447		163.1343	163.1343	8.7000e-003		163.3171

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925
Unmitigated	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264		8.6160	8.6160	8.4000e-003		8.7925
Total	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264		8.6160	8.6160	8.4000e-003		8.7925
Total	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

Valiano - Grading (Phase 2 - N 2)**San Diego County, Mitigation Report****Construction Mitigation Summary**

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Grading	0.87	0.96	0.29	0.00	0.99	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.90	0.97	0.47	0.00	0.99	0.99	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Excavators	Diesel	Tier 4 Final	2	2	Level 2	15.00
Graders	Diesel	Tier 4 Final	1	1	Level 2	15.00
Rubber Tired Dozers	Diesel	Tier 4 Final	4	4	Level 2	15.00
Scrapers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	6	6	Level 2	15.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					
Excavators	1.16500E-002	1.32920E-001	1.02850E-001	1.60000E-004	6.54000E-003	6.02000E-003	0.00000E+000	1.49663E+001	1.49663E+001	4.51000E-003	0.00000E+000	1.50611E+001
Graders	1.52800E-002	1.55700E-001	7.39100E-002	9.00000E-005	8.75000E-003	8.05000E-003	0.00000E+000	8.83698E+000	8.83698E+000	2.67000E-003	0.00000E+000	8.89296E+000
Rubber Tired Dozers	3.71500E-002	4.16120E-001	3.14550E-001	2.70000E-004	1.93600E-002	1.78100E-002	0.00000E+000	2.51317E+001	2.51317E+001	7.58000E-003	0.00000E+000	2.52909E+001
Scrapers	4.14700E-002	5.27870E-001	3.30640E-001	4.50000E-004	2.12800E-002	1.95700E-002	0.00000E+000	4.21154E+001	4.21154E+001	1.27000E-002	0.00000E+000	4.23822E+001
Tractors/Loaders/Backhoes	1.70300E-002	1.62750E-001	1.20630E-001	1.60000E-004	1.25300E-002	1.15300E-002	0.00000E+000	1.46818E+001	1.46818E+001	4.43000E-003	0.00000E+000	1.47748E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					
Excavators	1.95000E-003	7.20000E-003	1.20520E-001	1.60000E-004	1.30000E-004	1.30000E-004	0.00000E+000	1.49663E+001	1.49663E+001	4.51000E-003	0.00000E+000	1.50611E+001
Graders	1.13000E-003	4.17000E-003	6.98300E-002	9.00000E-005	8.00000E-005	8.00000E-005	0.00000E+000	8.83697E+000	8.83697E+000	2.67000E-003	0.00000E+000	8.89295E+000
Rubber Tired Dozers	3.24000E-003	1.19300E-002	1.18730E-001	2.70000E-004	2.20000E-004	2.20000E-004	0.00000E+000	2.51317E+001	2.51317E+001	7.58000E-003	0.00000E+000	2.52909E+001
Scrapers	5.50000E-003	2.02600E-002	2.01700E-001	4.50000E-004	3.70000E-004	3.70000E-004	0.00000E+000	4.21153E+001	4.21153E+001	1.27000E-002	0.00000E+000	4.23821E+001
Tractors/Loaders/Backhoes	1.90000E-003	6.99000E-003	1.17100E-001	1.60000E-004	1.30000E-004	1.30000E-004	0.00000E+000	1.46817E+001	1.46817E+001	4.43000E-003	0.00000E+000	1.47747E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Excavators	8.32618E-001	9.45832E-001	1.71804E-001	0.00000E+000	9.80122E-001	9.78405E-001	0.00000E+000	1.33633E-006	1.33633E-006	0.00000E+000	0.00000E+000	1.32792E-006
Graders	9.26047E-001	9.73218E-001	5.52023E-002	0.00000E+000	9.90857E-001	9.90062E-001	0.00000E+000	1.13161E-006	1.13161E-006	0.00000E+000	0.00000E+000	1.12448E-006
Rubber Tired Dozers	9.12786E-001	9.71330E-001	6.22540E-001	0.00000E+000	9.88636E-001	9.87647E-001	0.00000E+000	1.19371E-006	1.19371E-006	0.00000E+000	0.00000E+000	1.18620E-006
Scrapers	8.67374E-001	9.61619E-001	3.89971E-001	0.00000E+000	9.82613E-001	9.81094E-001	0.00000E+000	1.18721E-006	1.18721E-006	0.00000E+000	0.00000E+000	1.17974E-006
Tractors/Loaders/Backhoes	8.88432E-001	9.57051E-001	2.92630E-002	0.00000E+000	9.89625E-001	9.88725E-001	0.00000E+000	6.81118E-007	6.81118E-007	0.00000E+000	0.00000E+000	6.76830E-007

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input	Mitigation Input	Mitigation Input			
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	0.00		
Yes	Clean Paved Road	% PM Reduction	0.00				

Phase	Source	Unmitigated		Mitigated		Percent Reduction	
		PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Grading	Fugitive Dust	0.13	0.05	0.06	0.02	0.55	0.55
Grading	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.09	0.05	0.04	0.02	0.55	0.55
Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	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
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting: Low Density Suburban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00	0.00	0.00	
No	Land Use	Increase Diversity	-0.01	0.13		
No	Land Use	Improve Walkability Design	0.00	0.00		
No	Land Use	Improve Destination Accessibility	0.00	0.00		
No	Land Use	Increase Transit Accessibility	0.25	0.00		
No	Land Use	Integrate Below Market Rate Housing	0.00	0.00		
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network			
No	Neighborhood Enhancements	Provide Traffic Calming Measures			
No	Neighborhood Enhancements	Implement NEV Network	0.00		
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00		
No	Parking Policy Pricing	Limit Parking Supply	0.00	0.00	
No	Parking Policy Pricing	Unbundle Parking Costs	0.00	0.00	
No	Parking Policy Pricing	On-street Market Pricing	0.00	0.00	
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00		
No	Transit Improvements	Provide BRT System	0.00	0.00	
No	Transit Improvements	Expand Transit Network	0.00	0.00	
No	Transit Improvements	Increase Transit Frequency	0.00		0.00
	Transit Improvements	Transit Improvements Subtotal	0.00		
		Land Use and Site Enhancement Subtotal	0.00		
No	Commute	Implement Trip Reduction Program			
No	Commute	Transit Subsidy			
No	Commute	Implement Employee Parking "Cash Out"	3.00		
No	Commute	Workplace Parking Charge		0.00	
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00		
No	Commute	Market Commute Trip Reduction Option	0.00		
No	Commute	Employee Vanpool/Shuttle	0.00		2.00
No	Commute	Provide Ride Sharing Program	5.00		
	Commute	Commute Subtotal	0.00		

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	250.00
No	Use Low VOC Paint (Residential Exterior)	250.00
No	Use Low VOC Paint (Non-residential Interior)	250.00
No	Use Low VOC Paint (Non-residential Exterior)	250.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher	15.00
Fan	50.00
Refrigerator	15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy	0.00	0.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape	0.00	0.00

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

Valiano - Grading (Phase 3 - N 3)
San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	35.00	Dwelling Unit	11.36	63,000.00	100

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Based on schedule provided by applicant

Off-road Equipment -

Off-road Equipment -

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction Only.

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, Level 2 DPF, and 15% oxidation catalyst

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	30.00	35.00
tblConstructionPhase	PhaseEndDate	3/3/2017	3/4/2017
tblConstructionPhase	PhaseEndDate	1/13/2017	1/15/2017
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	41.80	0.00
tblFireplaces	NumberWood	26.60	0.00
tblProjectCharacteristics	OperationalYear	2014	2020

tblSolidWaste	SolidWasteGenerationRate	88.97	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	4,951,705.95	0.00
tblWater	OutdoorWaterUseRate	3,121,727.66	0.00
tblWoodstoves	NumberCatalytic	3.80	0.00
tblWoodstoves	NumberNoncatalytic	3.80	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2017	6.1627	69.6666	47.6143	0.0638	18.2141	3.3184	20.9694	9.9699	3.0529	12.5048	0.0000	6,480.3725	6,480.3725	1.9425	0.0000	6,521.1641
Total	6.1627	69.6666	47.6143	0.0638	18.2141	3.3184	20.9694	9.9699	3.0529	12.5048	0.0000	6,480.3725	6,480.3725	1.9425	0.0000	6,521.1641

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					
2017	0.8200	2.8607	35.5880	0.0638	8.2777	0.0516	8.3105	4.5080	0.0515	4.5407	0.0000	6,480.3725	6,480.3725	1.9425	0.0000	6,521.1641
Total	0.8200	2.8607	35.5880	0.0638	8.2777	0.0516	8.3105	4.5080	0.0515	4.5407	0.0000	6,480.3725	6,480.3725	1.9425	0.0000	6,521.1641

	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
Percent Reduction	86.69	95.89	25.26	0.00	54.55	98.44	60.37	54.78	98.31	63.69	0.00	0.00	0.00	0.00	0.00	0.00

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	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0882	0.0335	2.8971	1.5000e-004	0.0000	0.0159	0.0159	0.0000	0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058

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	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0882	0.0335	2.8971	1.5000e-004	0.0000	0.0159	0.0159	0.0000	0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/2/2017	1/15/2017	5	10	
2	Grading	Grading	1/16/2017	3/4/2017	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 87.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339		4,003.0859	4,003.0859	1.2265		4,028.8432
Total	4.8382	51.7535	39.3970	0.0391	18.0663	2.7542	20.8205	9.9307	2.5339	12.4646		4,003.0859	4,003.0859	1.2265		4,028.8432

3.2 Site Preparation - 2017**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0572	0.0671	0.7284	1.8700e-003	0.1479	1.0800e-003	0.1489	0.0392	9.9000e-004	0.0402		150.3031	150.3031	7.2500e-003		150.4553
Total	0.0572	0.0671	0.7284	1.8700e-003	0.1479	1.0800e-003	0.1489	0.0392	9.9000e-004	0.0402		150.3031	150.3031	7.2500e-003		150.4553

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					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	0.4757	1.7523	21.2415	0.0391		0.0317	0.0317		0.0317	0.0317	0.0000	4,003.0859	4,003.0859	1.2265		4,028.8432
Total	0.4757	1.7523	21.2415	0.0391	8.1298	0.0317	8.1615	4.4688	0.0317	4.5005	0.0000	4,003.0859	4,003.0859	1.2265		4,028.8432

3.2 Site Preparation - 2017**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0572	0.0671	0.7284	1.8700e-003	0.1479	1.0800e-003	0.1489	0.0392	9.9000e-004	0.0402		150.3031	150.3031	7.2500e-003		150.4553
Total	0.0572	0.0671	0.7284	1.8700e-003	0.1479	1.0800e-003	0.1489	0.0392	9.9000e-004	0.0402		150.3031	150.3031	7.2500e-003		150.4553

3.3 Grading - 2017**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					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.3690	6,313.3690	1.9344		6,353.9915
Total	6.0991	69.5920	46.8050	0.0617	8.6733	3.3172	11.9905	3.5965	3.0518	6.6483		6,313.3690	6,313.3690	1.9344		6,353.9915

3.3 Grading - 2017**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0635	0.0746	0.8093	2.0800e-003	0.1643	1.1900e-003	0.1655	0.0436	1.1000e-003	0.0447		167.0035	167.0035	8.0500e-003		167.1726
Total	0.0635	0.0746	0.8093	2.0800e-003	0.1643	1.1900e-003	0.1655	0.0436	1.1000e-003	0.0447		167.0035	167.0035	8.0500e-003		167.1726

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					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	0.7564	2.7861	34.7787	0.0617		0.0504	0.0504		0.0504	0.0504	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915
Total	0.7564	2.7861	34.7787	0.0617	3.9030	0.0504	3.9534	1.6184	0.0504	1.6689	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915

3.3 Grading - 2017

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0635	0.0746	0.8093	2.0800e-003	0.1643	1.1900e-003	0.1655	0.0436	1.1000e-003	0.0447		167.0035	167.0035	8.0500e-003		167.1726
Total	0.0635	0.0746	0.8093	2.0800e-003	0.1643	1.1900e-003	0.1655	0.0436	1.1000e-003	0.0447		167.0035	167.0035	8.0500e-003		167.1726

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058
Unmitigated	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159		5.1993	5.1993	5.0700e-003		5.3058
Total	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159		5.1993	5.1993	5.0700e-003		5.3058
Total	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

Valiano - Grading (Phase 3 - N 3)
San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	35.00	Dwelling Unit	11.36	63,000.00	100

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Based on schedule provided by applicant

Off-road Equipment -

Off-road Equipment -

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction Only.

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, Level 2 DPF, and 15% oxidation catalyst

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	30.00	35.00
tblConstructionPhase	PhaseEndDate	3/3/2017	3/4/2017
tblConstructionPhase	PhaseEndDate	1/13/2017	1/15/2017
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	41.80	0.00
tblFireplaces	NumberWood	26.60	0.00
tblProjectCharacteristics	OperationalYear	2014	2020

tblSolidWaste	SolidWasteGenerationRate	88.97	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	4,951,705.95	0.00
tblWater	OutdoorWaterUseRate	3,121,727.66	0.00
tblWoodstoves	NumberCatalytic	3.80	0.00
tblWoodstoves	NumberNoncatalytic	3.80	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2017	6.1663	69.6757	47.5874	0.0637	18.2141	3.3184	20.9694	9.9699	3.0529	12.5048	0.0000	6,470.1987	6,470.1987	1.9425	0.0000	6,510.9902
Total	6.1663	69.6757	47.5874	0.0637	18.2141	3.3184	20.9694	9.9699	3.0529	12.5048	0.0000	6,470.1987	6,470.1987	1.9425	0.0000	6,510.9902

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					
2017	0.8236	2.8698	35.5611	0.0637	8.2777	0.0516	8.3105	4.5080	0.0515	4.5407	0.0000	6,470.1986	6,470.1986	1.9425	0.0000	6,510.9902
Total	0.8236	2.8698	35.5611	0.0637	8.2777	0.0516	8.3105	4.5080	0.0515	4.5407	0.0000	6,470.1986	6,470.1986	1.9425	0.0000	6,510.9902

	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
Percent Reduction	86.64	95.88	25.27	0.00	54.55	98.44	60.37	54.78	98.31	63.69	0.00	0.00	0.00	0.00	0.00	0.00

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	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0882	0.0335	2.8971	1.5000e-004	0.0000	0.0159	0.0159	0.0000	0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058

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	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0882	0.0335	2.8971	1.5000e-004	0.0000	0.0159	0.0159	0.0000	0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/2/2017	1/15/2017	5	10	
2	Grading	Grading	1/16/2017	3/4/2017	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 87.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339		4,003.0859	4,003.0859	1.2265		4,028.8432
Total	4.8382	51.7535	39.3970	0.0391	18.0663	2.7542	20.8205	9.9307	2.5339	12.4646		4,003.0859	4,003.0859	1.2265		4,028.8432

3.2 Site Preparation - 2017**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0604	0.0753	0.7041	1.7600e-003	0.1479	1.0800e-003	0.1489	0.0392	9.9000e-004	0.0402		141.1467	141.1467	7.2500e-003		141.2989
Total	0.0604	0.0753	0.7041	1.7600e-003	0.1479	1.0800e-003	0.1489	0.0392	9.9000e-004	0.0402		141.1467	141.1467	7.2500e-003		141.2989

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					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	0.4757	1.7523	21.2415	0.0391		0.0317	0.0317		0.0317	0.0317	0.0000	4,003.0859	4,003.0859	1.2265		4,028.8432
Total	0.4757	1.7523	21.2415	0.0391	8.1298	0.0317	8.1615	4.4688	0.0317	4.5005	0.0000	4,003.0859	4,003.0859	1.2265		4,028.8432

3.2 Site Preparation - 2017**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0604	0.0753	0.7041	1.7600e-003	0.1479	1.0800e-003	0.1489	0.0392	9.9000e-004	0.0402		141.1467	141.1467	7.2500e-003		141.2989
Total	0.0604	0.0753	0.7041	1.7600e-003	0.1479	1.0800e-003	0.1489	0.0392	9.9000e-004	0.0402		141.1467	141.1467	7.2500e-003		141.2989

3.3 Grading - 2017**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					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.3690	6,313.3690	1.9344		6,353.9915
Total	6.0991	69.5920	46.8050	0.0617	8.6733	3.3172	11.9905	3.5965	3.0518	6.6483		6,313.3690	6,313.3690	1.9344		6,353.9915

3.3 Grading - 2017**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0671	0.0837	0.7823	1.9500e-003	0.1643	1.1900e-003	0.1655	0.0436	1.1000e-003	0.0447		156.8296	156.8296	8.0500e-003		156.9987
Total	0.0671	0.0837	0.7823	1.9500e-003	0.1643	1.1900e-003	0.1655	0.0436	1.1000e-003	0.0447		156.8296	156.8296	8.0500e-003		156.9987

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					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	0.7564	2.7861	34.7787	0.0617		0.0504	0.0504		0.0504	0.0504	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915
Total	0.7564	2.7861	34.7787	0.0617	3.9030	0.0504	3.9534	1.6184	0.0504	1.6689	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915

3.3 Grading - 2017

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0671	0.0837	0.7823	1.9500e-003	0.1643	1.1900e-003	0.1655	0.0436	1.1000e-003	0.0447		156.8296	156.8296	8.0500e-003		156.9987
Total	0.0671	0.0837	0.7823	1.9500e-003	0.1643	1.1900e-003	0.1655	0.0436	1.1000e-003	0.0447		156.8296	156.8296	8.0500e-003		156.9987

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058
Unmitigated	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159		5.1993	5.1993	5.0700e-003		5.3058
Total	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159		5.1993	5.1993	5.0700e-003		5.3058
Total	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

Valiano - Grading (Phase 3 - N 3)**San Diego County, Mitigation Report****Construction Mitigation Summary**

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Grading	0.87	0.96	0.25	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.89	0.96	0.45	0.00	0.99	0.99	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Excavators	Diesel	Tier 4 Final	2	2	Level 2	15.00
Graders	Diesel	Tier 4 Final	1	1	Level 2	15.00
Rubber Tired Dozers	Diesel	Tier 4 Final	4	4	Level 2	15.00
Scrapers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	6	6	Level 2	15.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					
Excavators	1.26800E-002	1.40590E-001	1.19740E-001	1.90000E-004	6.92000E-003	6.36000E-003	0.00000E+000	1.71859E+001	1.71859E+001	5.27000E-003	0.00000E+000	1.72964E+001
Graders	1.66700E-002	1.68720E-001	8.46700E-002	1.10000E-004	9.48000E-003	8.72000E-003	0.00000E+000	1.01224E+001	1.01224E+001	3.10000E-003	0.00000E+000	1.01875E+001
Rubber Tired Dozers	3.86900E-002	4.28760E-001	3.23070E-001	2.90000E-004	1.99200E-002	1.83200E-002	0.00000E+000	2.68303E+001	2.68303E+001	8.22000E-003	0.00000E+000	2.70029E+001
Scrapers	4.54700E-002	5.71140E-001	3.56940E-001	5.20000E-004	2.29200E-002	2.10900E-002	0.00000E+000	4.83687E+001	4.83687E+001	1.48200E-002	0.00000E+000	4.86799E+001
Tractors/Loaders/Backhoes	1.74200E-002	1.67410E-001	1.31660E-001	1.70000E-004	1.25900E-002	1.15800E-002	0.00000E+000	1.58799E+001	1.58799E+001	4.87000E-003	0.00000E+000	1.59821E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					
Excavators	2.28000E-003	8.40000E-003	1.40600E-001	1.90000E-004	1.50000E-004	1.50000E-004	0.00000E+000	1.71858E+001	1.71858E+001	5.27000E-003	0.00000E+000	1.72964E+001
Graders	1.32000E-003	4.87000E-003	8.14700E-002	1.10000E-004	9.00000E-005	9.00000E-005	0.00000E+000	1.01224E+001	1.01224E+001	3.10000E-003	0.00000E+000	1.01875E+001
Rubber Tired Dozers	3.51000E-003	1.29200E-002	1.28630E-001	2.90000E-004	2.30000E-004	2.30000E-004	0.00000E+000	2.68302E+001	2.68302E+001	8.22000E-003	0.00000E+000	2.70029E+001
Scrapers	6.42000E-003	2.36400E-002	2.35320E-001	5.20000E-004	4.30000E-004	4.30000E-004	0.00000E+000	4.83686E+001	4.83686E+001	1.48200E-002	0.00000E+000	4.86799E+001
Tractors/Loaders/Backhoes	2.09000E-003	7.69000E-003	1.28810E-001	1.70000E-004	1.40000E-004	1.40000E-004	0.00000E+000	1.58799E+001	1.58799E+001	4.87000E-003	0.00000E+000	1.59820E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Excavators	8.20189E-001	9.40252E-001	1.74211E-001	0.00000E+000	9.78324E-001	9.76415E-001	0.00000E+000	1.16375E-006	1.16375E-006	0.00000E+000	0.00000E+000	1.15631E-006
Graders	9.20816E-001	9.71136E-001	3.77938E-002	0.00000E+000	9.90506E-001	9.89679E-001	0.00000E+000	9.87909E-007	9.87909E-007	0.00000E+000	0.00000E+000	9.81593E-007
Rubber Tired Dozers	9.09279E-001	9.69867E-001	6.01851E-001	0.00000E+000	9.88454E-001	9.87445E-001	0.00000E+000	1.49085E-006	1.49085E-006	0.00000E+000	0.00000E+000	1.11099E-006
Scrapers	8.58808E-001	9.58609E-001	3.40730E-001	0.00000E+000	9.81239E-001	9.79611E-001	0.00000E+000	1.03373E-006	1.03373E-006	0.00000E+000	0.00000E+000	1.02712E-006
Tractors/Loaders/Backhoes	8.80023E-001	9.54065E-001	2.16467E-002	0.00000E+000	9.88880E-001	9.87910E-001	0.00000E+000	1.25946E-006	1.25946E-006	0.00000E+000	0.00000E+000	1.25140E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input	Mitigation Input	Mitigation Input			
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	0.00		
Yes	Clean Paved Road	% PM Reduction	0.00				

Phase	Source	Unmitigated		Mitigated		Percent Reduction	
		PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Grading	Fugitive Dust	0.15	0.06	0.07	0.03	0.55	0.55
Grading	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.09	0.05	0.04	0.02	0.55	0.55
Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	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
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting: Low Density Suburban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00	0.00	0.00	
No	Land Use	Increase Diversity	-0.01	0.13		
No	Land Use	Improve Walkability Design	0.00	0.00		
No	Land Use	Improve Destination Accessibility	0.00	0.00		
No	Land Use	Increase Transit Accessibility	0.25	0.00		
No	Land Use	Integrate Below Market Rate Housing	0.00	0.00		
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network			
No	Neighborhood Enhancements	Provide Traffic Calming Measures			
No	Neighborhood Enhancements	Implement NEV Network	0.00		
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00		
No	Parking Policy Pricing	Limit Parking Supply	0.00	0.00	
No	Parking Policy Pricing	Unbundle Parking Costs	0.00	0.00	
No	Parking Policy Pricing	On-street Market Pricing	0.00	0.00	
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00		
No	Transit Improvements	Provide BRT System	0.00	0.00	
No	Transit Improvements	Expand Transit Network	0.00	0.00	
No	Transit Improvements	Increase Transit Frequency	0.00		0.00
	Transit Improvements	Transit Improvements Subtotal	0.00		
		Land Use and Site Enhancement Subtotal	0.00		
No	Commute	Implement Trip Reduction Program			
No	Commute	Transit Subsidy			
No	Commute	Implement Employee Parking "Cash Out"	3.00		
No	Commute	Workplace Parking Charge		0.00	
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00		
No	Commute	Market Commute Trip Reduction Option	0.00		
No	Commute	Employee Vanpool/Shuttle	0.00		2.00
No	Commute	Provide Ride Sharing Program	5.00		
	Commute	Commute Subtotal	0.00		

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	250.00
No	Use Low VOC Paint (Residential Exterior)	250.00
No	Use Low VOC Paint (Non-residential Interior)	250.00
No	Use Low VOC Paint (Non-residential Exterior)	250.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher	15.00
Fan	50.00
Refrigerator	15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy	0.00	0.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape	0.00	0.00

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

Valiano - Grading (Phase 4 - N 4)
San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	2.50	Acre	2.50	108,900.00	0
Single Family Housing	76.00	Dwelling Unit	24.68	136,800.00	217

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Phasing obtained from applicant.

Grading -

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, Level 2 DPF, and 15% oxidation catalyst

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	9/29/2017	9/30/2017
tblConstructionPhase	PhaseEndDate	7/28/2017	7/29/2017
tblConstructionPhase	PhaseStartDate	7/30/2017	7/31/2017
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	37.95	0.00
tblFireplaces	NumberWood	24.15	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.21	0.00

tblSolidWaste	SolidWasteGenerationRate	80.77	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	4,495,627.77	0.00
tblWater	OutdoorWaterUseRate	2,978,703.37	0.00
tblWater	OutdoorWaterUseRate	2,834,200.11	0.00
tblWoodstoves	NumberCatalytic	3.45	0.00
tblWoodstoves	NumberNoncatalytic	3.45	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2017	6.1627	69.6666	47.6143	0.0638	18.2141	3.3184	20.9694	9.9699	3.0529	12.5048	0.0000	6,480.3725	6,480.3725	1.9425	0.0000	6,521.1641
Total	6.1627	69.6666	47.6143	0.0638	18.2141	3.3184	20.9694	9.9699	3.0529	12.5048	0.0000	6,480.3725	6,480.3725	1.9425	0.0000	6,521.1641

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					
2017	0.8200	2.8607	35.5880	0.0638	8.2777	0.0516	8.3105	4.5080	0.0515	4.5407	0.0000	6,480.3725	6,480.3725	1.9425	0.0000	6,521.1641
Total	0.8200	2.8607	35.5880	0.0638	8.2777	0.0516	8.3105	4.5080	0.0515	4.5407	0.0000	6,480.3725	6,480.3725	1.9425	0.0000	6,521.1641

	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
Percent Reduction	86.69	95.89	25.26	0.00	54.55	98.44	60.37	54.78	98.31	63.69	0.00	0.00	0.00	0.00	0.00	0.00

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	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1916	0.0728	6.2912	3.3000e-004	0.0000	0.0346	0.0346	0.0000	0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

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	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1916	0.0728	6.2912	3.3000e-004	0.0000	0.0346	0.0346	0.0000	0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/3/2017	7/29/2017	5	20	
2	Grading	Grading	7/31/2017	9/30/2017	5	45	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339		4,003.085 9	4,003.085 9	1.2265		4,028.843 2
Total	4.8382	51.7535	39.3970	0.0391	18.0663	2.7542	20.8205	9.9307	2.5339	12.4646		4,003.085 9	4,003.085 9	1.2265		4,028.843 2

3.2 Site Preparation - 2017**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0572	0.0671	0.7284	1.8700e-003	0.1479	1.0800e-003	0.1489	0.0392	9.9000e-004	0.0402		150.3031	150.3031	7.2500e-003		150.4553
Total	0.0572	0.0671	0.7284	1.8700e-003	0.1479	1.0800e-003	0.1489	0.0392	9.9000e-004	0.0402		150.3031	150.3031	7.2500e-003		150.4553

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					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	0.4757	1.7523	21.2415	0.0391		0.0317	0.0317		0.0317	0.0317	0.0000	4,003.0859	4,003.0859	1.2265		4,028.8432
Total	0.4757	1.7523	21.2415	0.0391	8.1298	0.0317	8.1615	4.4688	0.0317	4.5005	0.0000	4,003.0859	4,003.0859	1.2265		4,028.8432

3.2 Site Preparation - 2017**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0572	0.0671	0.7284	1.8700e-003	0.1479	1.0800e-003	0.1489	0.0392	9.9000e-004	0.0402		150.3031	150.3031	7.2500e-003		150.4553
Total	0.0572	0.0671	0.7284	1.8700e-003	0.1479	1.0800e-003	0.1489	0.0392	9.9000e-004	0.0402		150.3031	150.3031	7.2500e-003		150.4553

3.3 Grading - 2017**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					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.3690	6,313.3690	1.9344		6,353.9915
Total	6.0991	69.5920	46.8050	0.0617	8.6733	3.3172	11.9905	3.5965	3.0518	6.6483		6,313.3690	6,313.3690	1.9344		6,353.9915

3.3 Grading - 2017**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0635	0.0746	0.8093	2.0800e-003	0.1643	1.1900e-003	0.1655	0.0436	1.1000e-003	0.0447		167.0035	167.0035	8.0500e-003		167.1726
Total	0.0635	0.0746	0.8093	2.0800e-003	0.1643	1.1900e-003	0.1655	0.0436	1.1000e-003	0.0447		167.0035	167.0035	8.0500e-003		167.1726

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					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	0.7564	2.7861	34.7787	0.0617		0.0504	0.0504		0.0504	0.0504	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915
Total	0.7564	2.7861	34.7787	0.0617	3.9030	0.0504	3.9534	1.6184	0.0504	1.6689	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915

3.3 Grading - 2017

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0635	0.0746	0.8093	2.0800e-003	0.1643	1.1900e-003	0.1655	0.0436	1.1000e-003	0.0447		167.0035	167.0035	8.0500e-003		167.1726
Total	0.0635	0.0746	0.8093	2.0800e-003	0.1643	1.1900e-003	0.1655	0.0436	1.1000e-003	0.0447		167.0035	167.0035	8.0500e-003		167.1726

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217
Unmitigated	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346		11.2905	11.2905	0.0110		11.5217
Total	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346		11.2905	11.2905	0.0110		11.5217
Total	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

7.0 Water Detail

7.1 Mitigation Measures Water**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

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

Valiano - Grading (Phase 4 - N 4)
San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	2.50	Acre	2.50	108,900.00	0
Single Family Housing	76.00	Dwelling Unit	24.68	136,800.00	217

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Phasing obtained from applicant.

Grading -

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, Level 2 DPF, and 15% oxidation catalyst

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	9/29/2017	9/30/2017
tblConstructionPhase	PhaseEndDate	7/28/2017	7/29/2017
tblConstructionPhase	PhaseStartDate	7/30/2017	7/31/2017
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	37.95	0.00
tblFireplaces	NumberWood	24.15	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.21	0.00

tblSolidWaste	SolidWasteGenerationRate	80.77	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	4,495,627.77	0.00
tblWater	OutdoorWaterUseRate	2,978,703.37	0.00
tblWater	OutdoorWaterUseRate	2,834,200.11	0.00
tblWoodstoves	NumberCatalytic	3.45	0.00
tblWoodstoves	NumberNoncatalytic	3.45	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2017	6.1663	69.6757	47.5874	0.0637	18.2141	3.3184	20.9694	9.9699	3.0529	12.5048	0.0000	6,470.1987	6,470.1987	1.9425	0.0000	6,510.9902
Total	6.1663	69.6757	47.5874	0.0637	18.2141	3.3184	20.9694	9.9699	3.0529	12.5048	0.0000	6,470.1987	6,470.1987	1.9425	0.0000	6,510.9902

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					
2017	0.8236	2.8698	35.5611	0.0637	8.2777	0.0516	8.3105	4.5080	0.0515	4.5407	0.0000	6,470.1986	6,470.1986	1.9425	0.0000	6,510.9902
Total	0.8236	2.8698	35.5611	0.0637	8.2777	0.0516	8.3105	4.5080	0.0515	4.5407	0.0000	6,470.1986	6,470.1986	1.9425	0.0000	6,510.9902

	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
Percent Reduction	86.64	95.88	25.27	0.00	54.55	98.44	60.37	54.78	98.31	63.69	0.00	0.00	0.00	0.00	0.00	0.00

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	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1916	0.0728	6.2912	3.3000e-004	0.0000	0.0346	0.0346	0.0000	0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

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	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1916	0.0728	6.2912	3.3000e-004	0.0000	0.0346	0.0346	0.0000	0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/3/2017	7/29/2017	5	20	
2	Grading	Grading	7/31/2017	9/30/2017	5	45	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339		4,003.0859	4,003.0859	1.2265		4,028.8432
Total	4.8382	51.7535	39.3970	0.0391	18.0663	2.7542	20.8205	9.9307	2.5339	12.4646		4,003.0859	4,003.0859	1.2265		4,028.8432

3.2 Site Preparation - 2017**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0604	0.0753	0.7041	1.7600e-003	0.1479	1.0800e-003	0.1489	0.0392	9.9000e-004	0.0402		141.1467	141.1467	7.2500e-003		141.2989
Total	0.0604	0.0753	0.7041	1.7600e-003	0.1479	1.0800e-003	0.1489	0.0392	9.9000e-004	0.0402		141.1467	141.1467	7.2500e-003		141.2989

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					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	0.4757	1.7523	21.2415	0.0391		0.0317	0.0317		0.0317	0.0317	0.0000	4,003.0859	4,003.0859	1.2265		4,028.8432
Total	0.4757	1.7523	21.2415	0.0391	8.1298	0.0317	8.1615	4.4688	0.0317	4.5005	0.0000	4,003.0859	4,003.0859	1.2265		4,028.8432

3.2 Site Preparation - 2017**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0604	0.0753	0.7041	1.7600e-003	0.1479	1.0800e-003	0.1489	0.0392	9.9000e-004	0.0402		141.1467	141.1467	7.2500e-003		141.2989
Total	0.0604	0.0753	0.7041	1.7600e-003	0.1479	1.0800e-003	0.1489	0.0392	9.9000e-004	0.0402		141.1467	141.1467	7.2500e-003		141.2989

3.3 Grading - 2017**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					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.3690	6,313.3690	1.9344		6,353.9915
Total	6.0991	69.5920	46.8050	0.0617	8.6733	3.3172	11.9905	3.5965	3.0518	6.6483		6,313.3690	6,313.3690	1.9344		6,353.9915

3.3 Grading - 2017**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0671	0.0837	0.7823	1.9500e-003	0.1643	1.1900e-003	0.1655	0.0436	1.1000e-003	0.0447		156.8296	156.8296	8.0500e-003		156.9987
Total	0.0671	0.0837	0.7823	1.9500e-003	0.1643	1.1900e-003	0.1655	0.0436	1.1000e-003	0.0447		156.8296	156.8296	8.0500e-003		156.9987

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					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	0.7564	2.7861	34.7787	0.0617		0.0504	0.0504		0.0504	0.0504	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915
Total	0.7564	2.7861	34.7787	0.0617	3.9030	0.0504	3.9534	1.6184	0.0504	1.6689	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915

3.3 Grading - 2017

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0671	0.0837	0.7823	1.9500e-003	0.1643	1.1900e-003	0.1655	0.0436	1.1000e-003	0.0447		156.8296	156.8296	8.0500e-003		156.9987
Total	0.0671	0.0837	0.7823	1.9500e-003	0.1643	1.1900e-003	0.1655	0.0436	1.1000e-003	0.0447		156.8296	156.8296	8.0500e-003		156.9987

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217
Unmitigated	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346		11.2905	11.2905	0.0110		11.5217
Total	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346		11.2905	11.2905	0.0110		11.5217
Total	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

7.0 Water Detail

7.1 Mitigation Measures Water**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

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

Valiano - Grading (Phase 4 - N 4)
San Diego County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Grading	0.87	0.96	0.25	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.89	0.96	0.45	0.00	0.99	0.99	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Excavators	Diesel	Tier 4 Final	2	2	Level 2	15.00
Graders	Diesel	Tier 4 Final	1	1	Level 2	15.00
Rubber Tired Dozers	Diesel	Tier 4 Final	4	4	Level 2	15.00
Scrapers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	6	6	Level 2	15.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					
Excavators	1.63000E-002	1.80760E-001	1.53950E-001	2.40000E-004	8.89000E-003	8.18000E-003	0.00000E+000	2.20961E+001	2.20961E+001	6.77000E-003	0.00000E+000	2.22383E+001
Graders	2.14300E-002	2.16930E-001	1.08860E-001	1.40000E-004	1.21900E-002	1.12100E-002	0.00000E+000	1.30145E+001	1.30145E+001	3.99000E-003	0.00000E+000	1.30982E+001
Rubber Tired Dozers	6.24900E-002	6.92610E-001	5.21880E-001	4.70000E-004	3.21700E-002	2.96000E-002	0.00000E+000	4.33412E+001	4.33412E+001	1.32800E-002	0.00000E+000	4.36200E+001
Scrapers	5.84600E-002	7.34320E-001	4.58920E-001	6.70000E-004	2.94700E-002	2.71100E-002	0.00000E+000	6.21883E+001	6.21883E+001	1.90500E-002	0.00000E+000	6.25885E+001
Tractors/Loaders/Backhoes	2.69300E-002	2.58730E-001	2.03480E-001	2.60000E-004	1.94600E-002	1.79000E-002	0.00000E+000	2.45416E+001	2.45416E+001	7.52000E-003	0.00000E+000	2.46995E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					
Excavators	2.93000E-003	1.08000E-002	1.80770E-001	2.40000E-004	2.00000E-004	2.00000E-004	0.00000E+000	2.20961E+001	2.20961E+001	6.77000E-003	0.00000E+000	2.22383E+001
Graders	1.70000E-003	6.26000E-003	1.04750E-001	1.40000E-004	1.10000E-004	1.10000E-004	0.00000E+000	1.30145E+001	1.30145E+001	3.99000E-003	0.00000E+000	1.30982E+001
Rubber Tired Dozers	5.67000E-003	2.08700E-002	2.07780E-001	4.70000E-004	3.80000E-004	3.80000E-004	0.00000E+000	4.33411E+001	4.33411E+001	1.32800E-002	0.00000E+000	4.36200E+001
Scrapers	8.25000E-003	3.03900E-002	3.02560E-001	6.70000E-004	5.50000E-004	5.50000E-004	0.00000E+000	6.21882E+001	6.21882E+001	1.90500E-002	0.00000E+000	6.25884E+001
Tractors/Loaders/Backhoes	3.23000E-003	1.18900E-002	1.99080E-001	2.60000E-004	2.20000E-004	2.20000E-004	0.00000E+000	2.45416E+001	2.45416E+001	7.52000E-003	0.00000E+000	2.46995E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Excavators	8.20245E-001	9.40252E-001	1.74212E-001	0.00000E+000	9.77503E-001	9.75550E-001	0.00000E+000	1.35771E-006	1.35771E-006	0.00000E+000	0.00000E+000	8.99351E-007
Graders	9.20672E-001	9.71143E-001	3.77549E-002	0.00000E+000	9.90976E-001	9.90187E-001	0.00000E+000	1.53675E-006	1.53675E-006	0.00000E+000	0.00000E+000	1.52692E-006
Rubber Tired Dozers	9.09265E-001	9.69868E-001	6.01862E-001	0.00000E+000	9.88188E-001	9.87162E-001	0.00000E+000	1.38437E-006	1.38437E-006	0.00000E+000	0.00000E+000	1.14626E-006
Scrapers	8.58878E-001	9.58615E-001	3.40713E-001	0.00000E+000	9.81337E-001	9.79712E-001	0.00000E+000	1.28642E-006	1.28642E-006	0.00000E+000	0.00000E+000	1.27819E-006
Tractors/Loaders/Backhoes	8.80059E-001	9.54045E-001	2.16237E-002	0.00000E+000	9.88695E-001	9.87709E-001	0.00000E+000	1.22241E-006	1.22241E-006	0.00000E+000	0.00000E+000	1.21460E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input	Mitigation Input	Mitigation Input			
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	0.00		
Yes	Clean Paved Road	% PM Reduction	0.00				

Phase	Source	Unmitigated		Mitigated		Percent Reduction	
		PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Grading	Fugitive Dust	0.20	0.08	0.09	0.04	0.55	0.55
Grading	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.18	0.10	0.08	0.04	0.55	0.55
Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	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
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting: Low Density Suburban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00	0.00	0.00	
No	Land Use	Increase Diversity	0.20	0.49		
No	Land Use	Improve Walkability Design	0.00	0.00		
No	Land Use	Improve Destination Accessibility	0.00	0.00		
No	Land Use	Increase Transit Accessibility	0.25	0.00		
No	Land Use	Integrate Below Market Rate Housing	0.00	0.00		
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network			
No	Neighborhood Enhancements	Provide Traffic Calming Measures			
No	Neighborhood Enhancements	Implement NEV Network	0.00		
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00		
No	Parking Policy Pricing	Limit Parking Supply	0.00	0.00	
No	Parking Policy Pricing	Unbundle Parking Costs	0.00	0.00	
No	Parking Policy Pricing	On-street Market Pricing	0.00	0.00	
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00		
No	Transit Improvements	Provide BRT System	0.00	0.00	
No	Transit Improvements	Expand Transit Network	0.00	0.00	
No	Transit Improvements	Increase Transit Frequency	0.00		0.00
	Transit Improvements	Transit Improvements Subtotal	0.00		
		Land Use and Site Enhancement Subtotal	0.00		
No	Commute	Implement Trip Reduction Program			
No	Commute	Transit Subsidy			
No	Commute	Implement Employee Parking "Cash Out"	3.00		
No	Commute	Workplace Parking Charge		0.00	
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00		
No	Commute	Market Commute Trip Reduction Option	0.00		
No	Commute	Employee Vanpool/Shuttle	0.00		2.00
No	Commute	Provide Ride Sharing Program	5.00		
	Commute	Commute Subtotal	0.00		

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	250.00
No	Use Low VOC Paint (Residential Exterior)	250.00
No	Use Low VOC Paint (Non-residential Interior)	250.00
No	Use Low VOC Paint (Non-residential Exterior)	250.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy	0.00	0.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape	0.00	0.00

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

Valiano - Backbone Infrastructure (Phase 1 - N 1 & 5)
San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0
Single Family Housing	165.00	Dwelling Unit	53.57	297,000.00	472

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No default established for backbone infrastructure. Scheduling was based off the project phasing given by client.

Off-road Equipment -

Off-road Equipment - Equipment needed to install backbone infrastructure.

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, Level 2 DPF, and 15% oxidation catalyst

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	84.70	0.00
tblFireplaces	NumberWood	53.90	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.09	0.00
tblSolidWaste	SolidWasteGenerationRate	180.40	0.00
tblVehicleTrips	ST_TR	1.59	0.00

tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	10,033,719.95	0.00
tblWater	OutdoorWaterUseRate	1,191,481.35	0.00
tblWater	OutdoorWaterUseRate	6,325,606.05	0.00
tblWoodstoves	NumberCatalytic	7.70	0.00
tblWoodstoves	NumberNoncatalytic	7.70	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2016	3.6356	37.9831	21.2954	0.0417	0.1232	1.9449	2.0681	0.0327	1.7893	1.8220	0.0000	4,302.6197	4,302.6197	1.2651	0.0000	4,329.1858
Total	3.6356	37.9831	21.2954	0.0417	0.1232	1.9449	2.0681	0.0327	1.7893	1.8220	0.0000	4,302.6197	4,302.6197	1.2651	0.0000	4,329.1858

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					
2016	0.5440	1.8720	22.9398	0.0417	0.1232	0.0337	0.1569	0.0327	0.0336	0.0663	0.0000	4,302.6197	4,302.6197	1.2651	0.0000	4,329.1858
Total	0.5440	1.8720	22.9398	0.0417	0.1232	0.0337	0.1569	0.0327	0.0336	0.0663	0.0000	4,302.6197	4,302.6197	1.2651	0.0000	4,329.1858

	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
Percent Reduction	85.04	95.07	-7.72	0.00	0.00	98.27	92.41	0.00	98.12	96.36	0.00	0.00	0.00	0.00	0.00	0.00

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	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.4159	0.1580	13.6581	7.2000e-004	0.0000	0.0751	0.0751	0.0000	0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

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	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.4159	0.1580	13.6581	7.2000e-004	0.0000	0.0751	0.0751	0.0000	0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Backbone Infrastructure	Trenching	7/6/2016	11/2/2016	5	86	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Backbone Infrastructure	Forklifts	1	8.00	89	0.20
Backbone Infrastructure	Off-Highway Trucks	2	8.00	400	0.38
Backbone Infrastructure	Other Material Handling Equipment	1	8.00	167	0.40
Backbone Infrastructure	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Backbone Infrastructure	Trenchers	1	8.00	80	0.50

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Backbone Infrastructure	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

3.2 Backbone Infrastructure - 2016

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	3.5831	37.9215	20.6244	0.0402		1.9439	1.9439		1.7884	1.7884		4,172.339 9	4,172.339 9	1.2585		4,198.768 9
Total	3.5831	37.9215	20.6244	0.0402		1.9439	1.9439		1.7884	1.7884		4,172.339 9	4,172.339 9	1.2585		4,198.768 9

3.2 Backbone Infrastructure - 2016

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0524	0.0615	0.6711	1.5600e-003	0.1232	9.2000e-004	0.1242	0.0327	8.5000e-004	0.0335		130.2798	130.2798	6.5300e-003		130.4169
Total	0.0524	0.0615	0.6711	1.5600e-003	0.1232	9.2000e-004	0.1242	0.0327	8.5000e-004	0.0335		130.2798	130.2798	6.5300e-003		130.4169

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	0.4915	1.8105	22.2687	0.0402		0.0328	0.0328		0.0328	0.0328	0.0000	4,172.3399	4,172.3399	1.2585		4,198.7689
Total	0.4915	1.8105	22.2687	0.0402		0.0328	0.0328		0.0328	0.0328	0.0000	4,172.3399	4,172.3399	1.2585		4,198.7689

3.2 Backbone Infrastructure - 2016

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0524	0.0615	0.6711	1.5600e-003	0.1232	9.2000e-004	0.1242	0.0327	8.5000e-004	0.0335		130.2798	130.2798	6.5300e-003		130.4169
Total	0.0524	0.0615	0.6711	1.5600e-003	0.1232	9.2000e-004	0.1242	0.0327	8.5000e-004	0.0335		130.2798	130.2798	6.5300e-003		130.4169

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133
Unmitigated	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751		24.5114	24.5114	0.0239		25.0133
Total	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751		24.5114	24.5114	0.0239		25.0133
Total	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

7.0 Water Detail

7.1 Mitigation Measures Water**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

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

Valiano - Backbone Infrastructure (Phase 1 - N 1 & 5)
San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0
Single Family Housing	165.00	Dwelling Unit	53.57	297,000.00	472

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No default established for backbone infrastructure. Scheduling was based off the project phasing given by client.

Off-road Equipment -

Off-road Equipment - Equipment needed to install backbone infrastructure.

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, Level 2 DPF, and 15% oxidation catalyst

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	84.70	0.00
tblFireplaces	NumberWood	53.90	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.09	0.00
tblSolidWaste	SolidWasteGenerationRate	180.40	0.00
tblVehicleTrips	ST_TR	1.59	0.00

tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	10,033,719.95	0.00
tblWater	OutdoorWaterUseRate	1,191,481.35	0.00
tblWater	OutdoorWaterUseRate	6,325,606.05	0.00
tblWoodstoves	NumberCatalytic	7.70	0.00
tblWoodstoves	NumberNoncatalytic	7.70	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2016	3.6387	37.9906	21.2763	0.0416	0.1232	1.9449	2.0681	0.0327	1.7893	1.8220	0.0000	4,294.6906	4,294.6906	1.2651	0.0000	4,321.2567
Total	3.6387	37.9906	21.2763	0.0416	0.1232	1.9449	2.0681	0.0327	1.7893	1.8220	0.0000	4,294.6906	4,294.6906	1.2651	0.0000	4,321.2567

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					
2016	0.5471	1.8795	22.9206	0.0416	0.1232	0.0337	0.1569	0.0327	0.0336	0.0663	0.0000	4,294.6906	4,294.6906	1.2651	0.0000	4,321.2567
Total	0.5471	1.8795	22.9206	0.0416	0.1232	0.0337	0.1569	0.0327	0.0336	0.0663	0.0000	4,294.6906	4,294.6906	1.2651	0.0000	4,321.2567

	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
Percent Reduction	84.96	95.05	-7.73	0.00	0.00	98.27	92.41	0.00	98.12	96.36	0.00	0.00	0.00	0.00	0.00	0.00

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	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.4159	0.1580	13.6581	7.2000e-004	0.0000	0.0751	0.0751	0.0000	0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

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	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.4159	0.1580	13.6581	7.2000e-004	0.0000	0.0751	0.0751	0.0000	0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Backbone Infrastructure	Trenching	7/6/2016	11/2/2016	5	86	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Backbone Infrastructure	Forklifts	1	8.00	89	0.20
Backbone Infrastructure	Off-Highway Trucks	2	8.00	400	0.38
Backbone Infrastructure	Other Material Handling Equipment	1	8.00	167	0.40
Backbone Infrastructure	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Backbone Infrastructure	Trenchers	1	8.00	80	0.50

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Backbone Infrastructure	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

3.2 Backbone Infrastructure - 2016

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	3.5831	37.9215	20.6244	0.0402		1.9439	1.9439		1.7884	1.7884		4,172.339 9	4,172.339 9	1.2585		4,198.768 9
Total	3.5831	37.9215	20.6244	0.0402		1.9439	1.9439		1.7884	1.7884		4,172.339 9	4,172.339 9	1.2585		4,198.768 9

3.2 Backbone Infrastructure - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0556	0.0690	0.6519	1.4700e-003	0.1232	9.2000e-004	0.1242	0.0327	8.5000e-004	0.0335		122.3507	122.3507	6.5300e-003		122.4878
Total	0.0556	0.0690	0.6519	1.4700e-003	0.1232	9.2000e-004	0.1242	0.0327	8.5000e-004	0.0335		122.3507	122.3507	6.5300e-003		122.4878

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	0.4915	1.8105	22.2687	0.0402		0.0328	0.0328		0.0328	0.0328	0.0000	4,172.3399	4,172.3399	1.2585		4,198.7689
Total	0.4915	1.8105	22.2687	0.0402		0.0328	0.0328		0.0328	0.0328	0.0000	4,172.3399	4,172.3399	1.2585		4,198.7689

3.2 Backbone Infrastructure - 2016

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0556	0.0690	0.6519	1.4700e-003	0.1232	9.2000e-004	0.1242	0.0327	8.5000e-004	0.0335		122.3507	122.3507	6.5300e-003		122.4878
Total	0.0556	0.0690	0.6519	1.4700e-003	0.1232	9.2000e-004	0.1242	0.0327	8.5000e-004	0.0335		122.3507	122.3507	6.5300e-003		122.4878

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133
Unmitigated	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751		24.5114	24.5114	0.0239		25.0133
Total	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751		24.5114	24.5114	0.0239		25.0133
Total	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

7.0 Water Detail

7.1 Mitigation Measures Water**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

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

Valiano - Backbone Infrastructure (Phase 1 - N 1 & 5)**San Diego County, Mitigation Report****Construction Mitigation Summary**

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Backbone Infrastructure	0.85	0.95	-0.08	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Forklifts	Diesel	Tier 4 Final	1	1	Level 2	15.00
Off-Highway Trucks	Diesel	Tier 4 Final	2	2	Level 2	15.00
Other Material Handling Equipment	Diesel	Tier 4 Final	1	1	Level 2	15.00
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1	1	Level 2	15.00
Trenchers	Diesel	Tier 4 Final	1	1	Level 2	15.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					
Forklifts	9.76000E-003	8.39900E-002	5.43100E-002	7.00000E-005	7.02000E-003	6.46000E-003	0.00000E+000	6.19158E+000	6.19158E+000	1.87000E-003	0.00000E+000	6.23080E+000
Off-Highway Trucks	8.10100E-002	9.33270E-001	4.34640E-001	1.13000E-003	3.52100E-002	3.23900E-002	0.00000E+000	1.06638E+002	1.06638E+002	3.21700E-002	0.00000E+000	1.07314E+002
Other Material Handling Equipment	2.47600E-002	2.64020E-001	1.73170E-001	2.50000E-004	1.41600E-002	1.30300E-002	0.00000E+000	2.32698E+001	2.32698E+001	7.02000E-003	0.00000E+000	2.34172E+001
Tractors/Loaders/Backhoes	1.46400E-002	1.39970E-001	1.03740E-001	1.30000E-004	1.07800E-002	9.91000E-003	0.00000E+000	1.26263E+001	1.26263E+001	3.81000E-003	0.00000E+000	1.27063E+001
Trenchers	2.39000E-002	2.09380E-001	1.20990E-001	1.50000E-004	1.64200E-002	1.51100E-002	0.00000E+000	1.40325E+001	1.40325E+001	4.23000E-003	0.00000E+000	1.41214E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					
Forklifts	8.10000E-004	2.98000E-003	4.99500E-002	7.00000E-005	5.00000E-005	5.00000E-005	0.00000E+000	6.19157E+000	6.19157E+000	1.87000E-003	0.00000E+000	6.23079E+000
Off-Highway Trucks	1.38300E-002	5.09500E-002	5.07210E-001	1.13000E-003	9.20000E-004	9.20000E-004	0.00000E+000	1.06638E+002	1.06638E+002	3.21700E-002	0.00000E+000	1.07314E+002
Other Material Handling Equipment	3.04000E-003	1.12000E-002	1.87440E-001	2.50000E-004	2.00000E-004	2.00000E-004	0.00000E+000	2.32698E+001	2.32698E+001	7.02000E-003	0.00000E+000	2.34172E+001
Tractors/Loaders/Backhoes	1.63000E-003	6.02000E-003	1.00710E-001	1.30000E-004	1.10000E-004	1.10000E-004	0.00000E+000	1.26263E+001	1.26263E+001	3.81000E-003	0.00000E+000	1.27063E+001
Trenchers	1.82000E-003	6.70000E-003	1.12240E-001	1.50000E-004	1.20000E-004	1.20000E-004	0.00000E+000	1.40325E+001	1.40325E+001	4.23000E-003	0.00000E+000	1.41214E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Forklifts	9.17008E-001	9.64520E-001	8.02799E-002	0.00000E+000	9.92877E-001	9.92260E-001	0.00000E+000	1.61510E-006	1.61510E-006	0.00000E+000	0.00000E+000	1.60493E-006
Off-Highway Trucks	8.29280E-001	9.45407E-001	1.66966E-001	0.00000E+000	9.73871E-001	9.71596E-001	0.00000E+000	1.12530E-006	1.12530E-006	0.00000E+000	0.00000E+000	1.21140E-006
Other Material Handling Equipment	8.77221E-001	9.57579E-001	8.24046E-002	0.00000E+000	9.85876E-001	9.84651E-001	0.00000E+000	1.28922E-006	1.28922E-006	0.00000E+000	0.00000E+000	1.28111E-006
Tractors/Loaders/Backhoes	8.88661E-001	9.56991E-001	2.92076E-002	0.00000E+000	9.89796E-001	9.88900E-001	0.00000E+000	1.58399E-006	1.58399E-006	0.00000E+000	0.00000E+000	1.57402E-006
Trenchers	9.23849E-001	9.68001E-001	7.23200E-002	0.00000E+000	9.92692E-001	9.92058E-001	0.00000E+000	7.12630E-007	7.12630E-007	0.00000E+000	0.00000E+000	1.41629E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input	Mitigation Input	Mitigation Input		
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00	
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00	
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day) 2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	0.00	
No	Clean Paved Road	% PM Reduction	0.00			

Phase	Source	Unmitigated		Mitigated		Percent Reduction	
		PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Backbone Infrastructure	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Backbone Infrastructure	Roads	0.01	0.00	0.01	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	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
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.10	0.32		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network			
No	Neighborhood Enhancements	Provide Traffic Calming Measures			
No	Neighborhood Enhancements	Implement NEV Network	0.00		
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00		
No	Parking Policy Pricing	Limit Parking Supply	0.00		
No	Parking Policy Pricing	Unbundle Parking Costs	0.00		
No	Parking Policy Pricing	On-street Market Pricing	0.00		
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00		
No	Transit Improvements	Provide BRT System	0.00		
No	Transit Improvements	Expand Transit Network	0.00		
No	Transit Improvements	Increase Transit Frequency	0.00		
	Transit Improvements	Transit Improvements Subtotal	0.00		
		Land Use and Site Enhancement Subtotal	0.00		
No	Commute	Implement Trip Reduction Program			
No	Commute	Transit Subsidy			
No	Commute	Implement Employee Parking "Cash Out"			
No	Commute	Workplace Parking Charge			
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00		
No	Commute	Market Commute Trip Reduction Option	0.00		
No	Commute	Employee Vanpool/Shuttle	0.00		2.00
No	Commute	Provide Ride Sharing Program			
	Commute	Commute Subtotal	0.00		

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	250.00
No	Use Low VOC Paint (Residential Exterior)	250.00
No	Use Low VOC Paint (Non-residential Interior)	250.00
No	Use Low VOC Paint (Non-residential Exterior)	250.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher	15.00
Fan	50.00
Refrigerator	15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy	0.00	0.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape	0.00	0.00

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

Valiano - Backbone Infrastructure (Phase 2 - N 2 & 3)
San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	93.00	Dwelling Unit	30.19	167,400.00	266

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No default established for backbone infrastructure. Scheduling was based off the project phasing given by client.

Off-road Equipment -

Off-road Equipment - Equipment needed to install backbone infrastructure.

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, Level 2 DPF, and 15% oxidation catalyst

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Residential_Exterior	134865	156735
tblAreaCoating	Area_Residential_Interior	404595	470205
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	4/28/2017	4/29/2017
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	61.05	0.00
tblFireplaces	NumberWood	38.85	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	129.97	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	7,232,096.84	0.00
tblWater	OutdoorWaterUseRate	4,559,365.40	0.00
tblWoodstoves	NumberCatalytic	5.55	0.00
tblWoodstoves	NumberNoncatalytic	5.55	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2017	3.3595	34.5943	20.3683	0.0417	0.1232	1.7600	1.8832	0.0327	1.6192	1.6519	0.0000	4,229.6953	4,229.6953	1.2636	0.0000	4,256.2316
Total	3.3595	34.5943	20.3683	0.0417	0.1232	1.7600	1.8832	0.0327	1.6192	1.6519	0.0000	4,229.6953	4,229.6953	1.2636	0.0000	4,256.2316

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					
2017	0.5392	1.8664	22.8756	0.0417	0.1232	0.0337	0.1569	0.0327	0.0336	0.0663	0.0000	4,229.6953	4,229.6953	1.2636	0.0000	4,256.2316
Total	0.5392	1.8664	22.8756	0.0417	0.1232	0.0337	0.1569	0.0327	0.0336	0.0663	0.0000	4,229.6953	4,229.6953	1.2636	0.0000	4,256.2316

	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
Percent Reduction	83.95	94.60	-12.31	0.00	0.00	98.09	91.67	0.00	97.92	95.99	0.00	0.00	0.00	0.00	0.00	0.00

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	0.2344	0.0890	7.6981	4.1000e-004		0.0423	0.0423		0.0423	0.0423	0.0000	13.8154	13.8154	0.0135	0.0000	14.0983
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.2344	0.0890	7.6981	4.1000e-004	0.0000	0.0423	0.0423	0.0000	0.0423	0.0423	0.0000	13.8154	13.8154	0.0135	0.0000	14.0983

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	0.2344	0.0890	7.6981	4.1000e-004		0.0423	0.0423		0.0423	0.0423	0.0000	13.8154	13.8154	0.0135	0.0000	14.0983
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.2344	0.0890	7.6981	4.1000e-004	0.0000	0.0423	0.0423	0.0000	0.0423	0.0423	0.0000	13.8154	13.8154	0.0135	0.0000	14.0983

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Backbone Infrastructure	Trenching	1/1/2017	4/29/2017	5	85	Neighborhoods 2 and 3

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Backbone Infrastructure	Forklifts	1	8.00	89	0.20
Backbone Infrastructure	Off-Highway Trucks	2	8.00	400	0.38
Backbone Infrastructure	Other Material Handling Equipment	1	8.00	167	0.40
Backbone Infrastructure	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Backbone Infrastructure	Trenchers	1	8.00	80	0.50

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Backbone Infrastructure	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Backbone Infrastructure - 2017

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	3.3119	34.5383	19.7614	0.0401		1.7591	1.7591		1.6184	1.6184		4,104.4427	4,104.4427	1.2576		4,130.8522
Total	3.3119	34.5383	19.7614	0.0401		1.7591	1.7591		1.6184	1.6184		4,104.4427	4,104.4427	1.2576		4,130.8522

3.2 Backbone Infrastructure - 2017**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0477	0.0559	0.6070	1.5600e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		125.2526	125.2526	6.0400e-003		125.3794
Total	0.0477	0.0559	0.6070	1.5600e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		125.2526	125.2526	6.0400e-003		125.3794

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	0.4915	1.8105	22.2687	0.0401		0.0328	0.0328		0.0328	0.0328	0.0000	4,104.4427	4,104.4427	1.2576		4,130.8522
Total	0.4915	1.8105	22.2687	0.0401		0.0328	0.0328		0.0328	0.0328	0.0000	4,104.4427	4,104.4427	1.2576		4,130.8522

3.2 Backbone Infrastructure - 2017

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0477	0.0559	0.6070	1.5600e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		125.2526	125.2526	6.0400e-003		125.3794
Total	0.0477	0.0559	0.6070	1.5600e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		125.2526	125.2526	6.0400e-003		125.3794

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.2344	0.0890	7.6981	4.1000e-004		0.0423	0.0423		0.0423	0.0423	0.0000	13.8154	13.8154	0.0135	0.0000	14.0983
Unmitigated	0.2344	0.0890	7.6981	4.1000e-004		0.0423	0.0423		0.0423	0.0423	0.0000	13.8154	13.8154	0.0135	0.0000	14.0983

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2344	0.0890	7.6981	4.1000e-004		0.0423	0.0423		0.0423	0.0423		13.8154	13.8154	0.0135		14.0983
Total	0.2344	0.0890	7.6981	4.1000e-004		0.0423	0.0423		0.0423	0.0423	0.0000	13.8154	13.8154	0.0135	0.0000	14.0983

6.2 Area by SubCategory

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					
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2344	0.0890	7.6981	4.1000e-004		0.0423	0.0423		0.0423	0.0423		13.8154	13.8154	0.0135		14.0983
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2344	0.0890	7.6981	4.1000e-004		0.0423	0.0423		0.0423	0.0423	0.0000	13.8154	13.8154	0.0135	0.0000	14.0983

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

Valiano - Backbone Infrastructure (Phase 2 - N 2 & 3)
San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	93.00	Dwelling Unit	30.19	167,400.00	266

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No default established for backbone infrastructure. Scheduling was based off the project phasing given by client.

Off-road Equipment -

Off-road Equipment - Equipment needed to install backbone infrastructure.

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, Level 2 DPF, and 15% oxidation catalyst

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Residential_Exterior	134865	156735
tblAreaCoating	Area_Residential_Interior	404595	470205
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	4/28/2017	4/29/2017
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	61.05	0.00
tblFireplaces	NumberWood	38.85	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	129.97	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	7,232,096.84	0.00
tblWater	OutdoorWaterUseRate	4,559,365.40	0.00
tblWoodstoves	NumberCatalytic	5.55	0.00
tblWoodstoves	NumberNoncatalytic	5.55	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2017	3.3622	34.6011	20.3481	0.0416	0.1232	1.7600	1.8832	0.0327	1.6192	1.6519	0.0000	4,222.0649	4,222.0649	1.2636	0.0000	4,248.6012
Total	3.3622	34.6011	20.3481	0.0416	0.1232	1.7600	1.8832	0.0327	1.6192	1.6519	0.0000	4,222.0649	4,222.0649	1.2636	0.0000	4,248.6012

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					
2017	0.5419	1.8732	22.8554	0.0416	0.1232	0.0337	0.1569	0.0327	0.0336	0.0663	0.0000	4,222.0649	4,222.0649	1.2636	0.0000	4,248.6012
Total	0.5419	1.8732	22.8554	0.0416	0.1232	0.0337	0.1569	0.0327	0.0336	0.0663	0.0000	4,222.0649	4,222.0649	1.2636	0.0000	4,248.6012

	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
Percent Reduction	83.88	94.59	-12.32	0.00	0.00	98.09	91.67	0.00	97.92	95.99	0.00	0.00	0.00	0.00	0.00	0.00

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	0.2344	0.0890	7.6981	4.1000e-004		0.0423	0.0423		0.0423	0.0423	0.0000	13.8154	13.8154	0.0135	0.0000	14.0983
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.2344	0.0890	7.6981	4.1000e-004	0.0000	0.0423	0.0423	0.0000	0.0423	0.0423	0.0000	13.8154	13.8154	0.0135	0.0000	14.0983

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	0.2344	0.0890	7.6981	4.1000e-004		0.0423	0.0423		0.0423	0.0423	0.0000	13.8154	13.8154	0.0135	0.0000	14.0983
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.2344	0.0890	7.6981	4.1000e-004	0.0000	0.0423	0.0423	0.0000	0.0423	0.0423	0.0000	13.8154	13.8154	0.0135	0.0000	14.0983

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Backbone Infrastructure	Trenching	1/1/2017	4/29/2017	5	85	Neighborhoods 2 and 3

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Backbone Infrastructure	Forklifts	1	8.00	89	0.20
Backbone Infrastructure	Off-Highway Trucks	2	8.00	400	0.38
Backbone Infrastructure	Other Material Handling Equipment	1	8.00	167	0.40
Backbone Infrastructure	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Backbone Infrastructure	Trenchers	1	8.00	80	0.50

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Backbone Infrastructure	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Backbone Infrastructure - 2017

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	3.3119	34.5383	19.7614	0.0401		1.7591	1.7591		1.6184	1.6184		4,104.4427	4,104.4427	1.2576		4,130.8522
Total	3.3119	34.5383	19.7614	0.0401		1.7591	1.7591		1.6184	1.6184		4,104.4427	4,104.4427	1.2576		4,130.8522

3.2 Backbone Infrastructure - 2017**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0504	0.0628	0.5868	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		117.6222	117.6222	6.0400e-003		117.7491
Total	0.0504	0.0628	0.5868	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		117.6222	117.6222	6.0400e-003		117.7491

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	0.4915	1.8105	22.2687	0.0401		0.0328	0.0328		0.0328	0.0328	0.0000	4,104.4427	4,104.4427	1.2576		4,130.8522
Total	0.4915	1.8105	22.2687	0.0401		0.0328	0.0328		0.0328	0.0328	0.0000	4,104.4427	4,104.4427	1.2576		4,130.8522

3.2 Backbone Infrastructure - 2017

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0504	0.0628	0.5868	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		117.6222	117.6222	6.0400e-003		117.7491
Total	0.0504	0.0628	0.5868	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		117.6222	117.6222	6.0400e-003		117.7491

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.2344	0.0890	7.6981	4.1000e-004		0.0423	0.0423		0.0423	0.0423	0.0000	13.8154	13.8154	0.0135	0.0000	14.0983
Unmitigated	0.2344	0.0890	7.6981	4.1000e-004		0.0423	0.0423		0.0423	0.0423	0.0000	13.8154	13.8154	0.0135	0.0000	14.0983

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2344	0.0890	7.6981	4.1000e-004		0.0423	0.0423		0.0423	0.0423		13.8154	13.8154	0.0135		14.0983
Total	0.2344	0.0890	7.6981	4.1000e-004		0.0423	0.0423		0.0423	0.0423	0.0000	13.8154	13.8154	0.0135	0.0000	14.0983

6.2 Area by SubCategory

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					
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2344	0.0890	7.6981	4.1000e-004		0.0423	0.0423		0.0423	0.0423		13.8154	13.8154	0.0135		14.0983
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2344	0.0890	7.6981	4.1000e-004		0.0423	0.0423		0.0423	0.0423	0.0000	13.8154	13.8154	0.0135	0.0000	14.0983

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

Valiano - Backbone Infrastructure (Phase 2 - N 2 & 3)**San Diego County, Mitigation Report****Construction Mitigation Summary**

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Backbone Infrastructure	0.84	0.95	-0.12	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Forklifts	Diesel	Tier 4 Final	1	1	Level 2	15.00
Off-Highway Trucks	Diesel	Tier 4 Final	2	2	Level 2	15.00
Other Material Handling Equipment	Diesel	Tier 4 Final	1	1	Level 2	15.00
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1	1	Level 2	15.00
Trenchers	Diesel	Tier 4 Final	1	1	Level 2	15.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					
Forklifts	8.96000E-003	7.76200E-002	5.30900E-002	6.00000E-005	6.40000E-003	5.89000E-003	0.00000E+000	6.02446E+000	6.02446E+000	1.85000E-003	0.00000E+000	6.06322E+000
Off-Highway Trucks	7.41200E-002	8.35920E-001	3.98260E-001	1.12000E-003	3.10300E-002	2.85500E-002	0.00000E+000	1.03657E+002	1.03657E+002	3.17600E-002	0.00000E+000	1.04324E+002
Other Material Handling Equipment	2.13700E-002	2.24730E-001	1.67800E-001	2.40000E-004	1.19100E-002	1.09600E-002	0.00000E+000	2.26418E+001	2.26418E+001	6.94000E-003	0.00000E+000	2.27875E+001
Tractors/Loaders/Backhoes	1.34600E-002	1.29360E-001	1.01740E-001	1.30000E-004	9.73000E-003	8.95000E-003	0.00000E+000	1.22708E+001	1.22708E+001	3.76000E-003	0.00000E+000	1.23498E+001
Trenchers	2.28300E-002	2.00250E-001	1.18980E-001	1.50000E-004	1.56900E-002	1.44300E-002	0.00000E+000	1.36542E+001	1.36542E+001	4.18000E-003	0.00000E+000	1.37420E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					
Forklifts	8.00000E-004	2.95000E-003	4.93700E-002	6.00000E-005	5.00000E-005	5.00000E-005	0.00000E+000	6.02445E+000	6.02445E+000	1.85000E-003	0.00000E+000	6.06321E+000
Off-Highway Trucks	1.36700E-002	5.03600E-002	5.01310E-001	1.12000E-003	9.10000E-004	9.10000E-004	0.00000E+000	1.03657E+002	1.03657E+002	3.17600E-002	0.00000E+000	1.04324E+002
Other Material Handling Equipment	3.00000E-003	1.10700E-002	1.85260E-001	2.40000E-004	2.00000E-004	2.00000E-004	0.00000E+000	2.26417E+001	2.26417E+001	6.94000E-003	0.00000E+000	2.27874E+001
Tractors/Loaders/Backhoes	1.61000E-003	5.95000E-003	9.95400E-002	1.30000E-004	1.10000E-004	1.10000E-004	0.00000E+000	1.22708E+001	1.22708E+001	3.76000E-003	0.00000E+000	1.23498E+001
Trenchers	1.80000E-003	6.63000E-003	1.10940E-001	1.50000E-004	1.20000E-004	1.20000E-004	0.00000E+000	1.36542E+001	1.36542E+001	4.18000E-003	0.00000E+000	1.37420E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Forklifts	9.10714E-001	9.61994E-001	7.00697E-002	0.00000E+000	9.92188E-001	9.91511E-001	0.00000E+000	1.65990E-006	1.65990E-006	0.00000E+000	0.00000E+000	1.64929E-006
Off-Highway Trucks	8.15569E-001	9.39755E-001	2.58751E-001	0.00000E+000	9.70674E-001	9.68126E-001	0.00000E+000	1.15766E-006	1.15766E-006	0.00000E+000	0.00000E+000	1.15026E-006
Other Material Handling Equipment	8.59616E-001	9.50741E-001	1.04052E-001	0.00000E+000	9.83207E-001	9.81752E-001	0.00000E+000	1.32499E-006	1.32499E-006	0.00000E+000	0.00000E+000	1.31651E-006
Tractors/Loaders/Backhoes	8.80386E-001	9.54004E-001	2.16237E-002	0.00000E+000	9.88695E-001	9.87709E-001	0.00000E+000	1.62988E-006	1.62988E-006	0.00000E+000	0.00000E+000	8.09732E-007
Trenchers	9.21156E-001	9.66891E-001	6.75744E-002	0.00000E+000	9.92352E-001	9.91684E-001	0.00000E+000	7.32377E-007	7.32377E-007	0.00000E+000	0.00000E+000	1.45539E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input	Mitigation Input	Mitigation Input		
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00	
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00	
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day) 2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	0.00	
Yes	Clean Paved Road	% PM Reduction	0.00			

Phase	Source	Unmitigated		Mitigated		Percent Reduction	
		PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Backbone Infrastructure	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Backbone Infrastructure	Roads	0.01	0.00	0.01	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	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
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	-0.01	0.13		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network			
No	Neighborhood Enhancements	Provide Traffic Calming Measures			
No	Neighborhood Enhancements	Implement NEV Network	0.00		
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00		
No	Parking Policy Pricing	Limit Parking Supply	0.00		
No	Parking Policy Pricing	Unbundle Parking Costs	0.00		
No	Parking Policy Pricing	On-street Market Pricing	0.00		
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00		
No	Transit Improvements	Provide BRT System	0.00		
No	Transit Improvements	Expand Transit Network	0.00		
No	Transit Improvements	Increase Transit Frequency	0.00		
	Transit Improvements	Transit Improvements Subtotal	0.00		
		Land Use and Site Enhancement Subtotal	0.00		
No	Commute	Implement Trip Reduction Program			
No	Commute	Transit Subsidy			
No	Commute	Implement Employee Parking "Cash Out"			
No	Commute	Workplace Parking Charge			
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00		
No	Commute	Market Commute Trip Reduction Option	0.00		
No	Commute	Employee Vanpool/Shuttle	0.00		2.00
No	Commute	Provide Ride Sharing Program			
	Commute	Commute Subtotal	0.00		

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	250.00
No	Use Low VOC Paint (Residential Exterior)	250.00
No	Use Low VOC Paint (Non-residential Interior)	250.00
No	Use Low VOC Paint (Non-residential Exterior)	250.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy	0.00	0.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape	0.00	0.00

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

Valiano - Backbone Infrastructure (Phase 3 - N 4)
San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	2.50	Acre	2.50	108,900.00	0
Single Family Housing	76.00	Dwelling Unit	24.68	136,800.00	217

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No default established for backbone infrastructure. Scheduling was based off the timeframe given for backbone infrastructure.

Off-road Equipment -

Off-road Equipment - Equipment needed to install backbone infrastructure.

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, Level 2 DPF, and 15% oxidation catalyst

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	37.95	0.00
tblFireplaces	NumberWood	24.15	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.21	0.00
tblSolidWaste	SolidWasteGenerationRate	80.77	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	4,495,627.77	0.00
tblWater	OutdoorWaterUseRate	2,978,703.37	0.00
tblWater	OutdoorWaterUseRate	2,834,200.11	0.00
tblWoodstoves	NumberCatalytic	3.45	0.00
tblWoodstoves	NumberNoncatalytic	3.45	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2018	2.8755	28.9215	18.9713	0.0417	0.1232	1.4382	1.5615	0.0327	1.3232	1.3559	0.0000	4,159.4068	4,159.4068	1.2630	0.0000	4,185.9292
Total	2.8755	28.9215	18.9713	0.0417	0.1232	1.4382	1.5615	0.0327	1.3232	1.3559	0.0000	4,159.4068	4,159.4068	1.2630	0.0000	4,185.9292

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					
2018	0.5350	1.8615	22.8196	0.0417	0.1232	0.0337	0.1569	0.0327	0.0336	0.0663	0.0000	4,159.4068	4,159.4068	1.2630	0.0000	4,185.9291
Total	0.5350	1.8615	22.8196	0.0417	0.1232	0.0337	0.1569	0.0327	0.0336	0.0663	0.0000	4,159.4068	4,159.4068	1.2630	0.0000	4,185.9291

	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
Percent Reduction	81.40	93.56	-20.29	0.00	0.00	97.66	89.95	0.00	97.46	95.11	0.00	0.00	0.00	0.00	0.00	0.00

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	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1916	0.0728	6.2912	3.3000e-004	0.0000	0.0346	0.0346	0.0000	0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

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	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1916	0.0728	6.2912	3.3000e-004	0.0000	0.0346	0.0346	0.0000	0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Backbone Infrastructure	Trenching	1/2/2018	5/1/2018	5	86	Neighborhood 4

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Backbone Infrastructure	Forklifts	1	8.00	89	0.20
Backbone Infrastructure	Off-Highway Trucks	2	8.00	400	0.38
Backbone Infrastructure	Other Material Handling Equipment	1	8.00	167	0.40
Backbone Infrastructure	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Backbone Infrastructure	Trenchers	1	8.00	80	0.50

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Backbone Infrastructure	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Backbone Infrastructure - 2018

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	2.8321	28.8705	18.4203	0.0401		1.4374	1.4374		1.3224	1.3224		4,038.852 4	4,038.852 4	1.2574		4,065.256 7
Total	2.8321	28.8705	18.4203	0.0401		1.4374	1.4374		1.3224	1.3224		4,038.852 4	4,038.852 4	1.2574		4,065.256 7

3.2 Backbone Infrastructure - 2018

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0435	0.0510	0.5510	1.5600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		120.5544	120.5544	5.6200e-003		120.6724
Total	0.0435	0.0510	0.5510	1.5600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		120.5544	120.5544	5.6200e-003		120.6724

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	0.4915	1.8105	22.2687	0.0401		0.0328	0.0328		0.0328	0.0328	0.0000	4,038.8524	4,038.8524	1.2574		4,065.2567
Total	0.4915	1.8105	22.2687	0.0401		0.0328	0.0328		0.0328	0.0328	0.0000	4,038.8524	4,038.8524	1.2574		4,065.2567

3.2 Backbone Infrastructure - 2018

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0435	0.0510	0.5510	1.5600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		120.5544	120.5544	5.6200e-003		120.6724
Total	0.0435	0.0510	0.5510	1.5600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		120.5544	120.5544	5.6200e-003		120.6724

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217
Unmitigated	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346		11.2905	11.2905	0.0110		11.5217
Total	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346		11.2905	11.2905	0.0110		11.5217
Total	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

7.0 Water Detail

7.1 Mitigation Measures Water**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

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

Valiano - Backbone Infrastructure (Phase 3 - N 4)
San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	2.50	Acre	2.50	108,900.00	0
Single Family Housing	76.00	Dwelling Unit	24.68	136,800.00	217

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No default established for backbone infrastructure. Scheduling was based off the timeframe given for backbone infrastructure.

Off-road Equipment -

Off-road Equipment - Equipment needed to install backbone infrastructure.

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, Level 2 DPF, and 15% oxidation catalyst

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	37.95	0.00
tblFireplaces	NumberWood	24.15	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.21	0.00
tblSolidWaste	SolidWasteGenerationRate	80.77	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	4,495,627.77	0.00
tblWater	OutdoorWaterUseRate	2,978,703.37	0.00
tblWater	OutdoorWaterUseRate	2,834,200.11	0.00
tblWoodstoves	NumberCatalytic	3.45	0.00
tblWoodstoves	NumberNoncatalytic	3.45	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2018	2.8778	28.9277	18.9502	0.0416	0.1232	1.4382	1.5615	0.0327	1.3232	1.3559	0.0000	4,152.0568	4,152.0568	1.2630	0.0000	4,178.5791
Total	2.8778	28.9277	18.9502	0.0416	0.1232	1.4382	1.5615	0.0327	1.3232	1.3559	0.0000	4,152.0568	4,152.0568	1.2630	0.0000	4,178.5791

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					
2018	0.5373	1.8677	22.7986	0.0416	0.1232	0.0337	0.1569	0.0327	0.0336	0.0663	0.0000	4,152.0568	4,152.0568	1.2630	0.0000	4,178.5791
Total	0.5373	1.8677	22.7986	0.0416	0.1232	0.0337	0.1569	0.0327	0.0336	0.0663	0.0000	4,152.0568	4,152.0568	1.2630	0.0000	4,178.5791

	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
Percent Reduction	81.33	93.54	-20.31	0.00	0.00	97.66	89.95	0.00	97.46	95.11	0.00	0.00	0.00	0.00	0.00	0.00

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	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1916	0.0728	6.2912	3.3000e-004	0.0000	0.0346	0.0346	0.0000	0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

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	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1916	0.0728	6.2912	3.3000e-004	0.0000	0.0346	0.0346	0.0000	0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Backbone Infrastructure	Trenching	1/2/2018	5/1/2018	5	86	Neighborhood 4

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Backbone Infrastructure	Forklifts	1	8.00	89	0.20
Backbone Infrastructure	Off-Highway Trucks	2	8.00	400	0.38
Backbone Infrastructure	Other Material Handling Equipment	1	8.00	167	0.40
Backbone Infrastructure	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Backbone Infrastructure	Trenchers	1	8.00	80	0.50

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Backbone Infrastructure	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Backbone Infrastructure - 2018

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	2.8321	28.8705	18.4203	0.0401		1.4374	1.4374		1.3224	1.3224		4,038.852 4	4,038.852 4	1.2574		4,065.256 7
Total	2.8321	28.8705	18.4203	0.0401		1.4374	1.4374		1.3224	1.3224		4,038.852 4	4,038.852 4	1.2574		4,065.256 7

3.2 Backbone Infrastructure - 2018

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0458	0.0573	0.5299	1.4600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		113.2044	113.2044	5.6200e-003		113.3224
Total	0.0458	0.0573	0.5299	1.4600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		113.2044	113.2044	5.6200e-003		113.3224

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	0.4915	1.8105	22.2687	0.0401		0.0328	0.0328		0.0328	0.0328	0.0000	4,038.8524	4,038.8524	1.2574		4,065.2567
Total	0.4915	1.8105	22.2687	0.0401		0.0328	0.0328		0.0328	0.0328	0.0000	4,038.8524	4,038.8524	1.2574		4,065.2567

3.2 Backbone Infrastructure - 2018

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0458	0.0573	0.5299	1.4600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		113.2044	113.2044	5.6200e-003		113.3224
Total	0.0458	0.0573	0.5299	1.4600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		113.2044	113.2044	5.6200e-003		113.3224

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217
Unmitigated	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346		11.2905	11.2905	0.0110		11.5217
Total	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346		11.2905	11.2905	0.0110		11.5217
Total	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

7.0 Water Detail

7.1 Mitigation Measures Water**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

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

Valiano - Backbone Infrastructure (Phase 3 - N 4)**San Diego County, Mitigation Report****Construction Mitigation Summary**

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Backbone Infrastructure	0.81	0.94	-0.20	0.00	0.98	0.97	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Forklifts	Diesel	Tier 4 Final	1	1	Level 2	15.00
Off-Highway Trucks	Diesel	Tier 4 Final	2	2	Level 2	15.00
Other Material Handling Equipment	Diesel	Tier 4 Final	1	1	Level 2	15.00
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1	1	Level 2	15.00
Trenchers	Diesel	Tier 4 Final	1	1	Level 2	15.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					
Forklifts	7.66000E-003	6.77000E-002	5.20800E-002	7.00000E-005	5.40000E-003	4.97000E-003	0.00000E+000	5.99909E+000	5.99909E+000	1.87000E-003	0.00000E+000	6.03831E+000
Off-Highway Trucks	6.61700E-002	7.12390E-001	3.59540E-001	1.13000E-003	2.60000E-002	2.39200E-002	0.00000E+000	1.03218E+002	1.03218E+002	3.21300E-002	0.00000E+000	1.03893E+002
Other Material Handling Equipment	1.65400E-002	1.68820E-001	1.63030E-001	2.50000E-004	8.74000E-003	8.04000E-003	0.00000E+000	2.25464E+001	2.25464E+001	7.02000E-003	0.00000E+000	2.26938E+001
Tractors/Loaders/Backhoes	1.14400E-002	1.13080E-001	1.00480E-001	1.30000E-004	8.01000E-003	7.37000E-003	0.00000E+000	1.22011E+001	1.22011E+001	3.80000E-003	0.00000E+000	1.22808E+001
Trenchers	1.99600E-002	1.79440E-001	1.16940E-001	1.50000E-004	1.36500E-002	1.25600E-002	0.00000E+000	1.35870E+001	1.35870E+001	4.23000E-003	0.00000E+000	1.36759E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					
Forklifts	8.10000E-004	2.98000E-003	4.99500E-002	7.00000E-005	5.00000E-005	5.00000E-005	0.00000E+000	5.99908E+000	5.99908E+000	1.87000E-003	0.00000E+000	6.03830E+000
Off-Highway Trucks	1.38300E-002	5.09500E-002	5.07210E-001	1.13000E-003	9.20000E-004	9.20000E-004	0.00000E+000	1.03218E+002	1.03218E+002	3.21300E-002	0.00000E+000	1.03892E+002
Other Material Handling Equipment	3.04000E-003	1.12000E-002	1.87440E-001	2.50000E-004	2.00000E-004	2.00000E-004	0.00000E+000	2.25464E+001	2.25464E+001	7.02000E-003	0.00000E+000	2.26938E+001
Tractors/Loaders/Backhoes	1.63000E-003	6.02000E-003	1.00710E-001	1.30000E-004	1.10000E-004	1.10000E-004	0.00000E+000	1.22011E+001	1.22011E+001	3.80000E-003	0.00000E+000	1.22808E+001
Trenchers	1.82000E-003	6.70000E-003	1.12240E-001	1.50000E-004	1.20000E-004	1.20000E-004	0.00000E+000	1.35870E+001	1.35870E+001	4.23000E-003	0.00000E+000	1.36759E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Forklifts	8.94256E-001	9.55982E-001	4.08986E-002	0.00000E+000	9.90741E-001	9.89940E-001	0.00000E+000	1.66692E-006	1.66692E-006	0.00000E+000	0.00000E+000	1.65609E-006
Off-Highway Trucks	7.90993E-001	9.28480E-001	4.10719E-001	0.00000E+000	9.64615E-001	9.61538E-001	0.00000E+000	1.16259E-006	1.16259E-006	0.00000E+000	0.00000E+000	1.25129E-006
Other Material Handling Equipment	8.16203E-001	9.33657E-001	1.49727E-001	0.00000E+000	9.77117E-001	9.75124E-001	0.00000E+000	1.33059E-006	1.33059E-006	0.00000E+000	0.00000E+000	1.32195E-006
Tractors/Loaders/Backhoes	8.57517E-001	9.46763E-001	2.28901E-003	0.00000E+000	9.86267E-001	9.85075E-001	0.00000E+000	8.19601E-007	8.19601E-007	0.00000E+000	0.00000E+000	1.62855E-006
Trenchers	9.08818E-001	9.62662E-001	4.01916E-002	0.00000E+000	9.91209E-001	9.90446E-001	0.00000E+000	1.47199E-006	1.47199E-006	0.00000E+000	0.00000E+000	7.31215E-007

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input	Mitigation Input	Mitigation Input		
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00	
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00	
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day) 2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	0.00	
Yes	Clean Paved Road	% PM Reduction	0.00			

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Backbone Infrastructure	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Backbone Infrastructure	Roads	0.01	0.00	0.01	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	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
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.20	0.49		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network			
No	Neighborhood Enhancements	Provide Traffic Calming Measures			
No	Neighborhood Enhancements	Implement NEV Network	0.00		
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00		
No	Parking Policy Pricing	Limit Parking Supply	0.00		
No	Parking Policy Pricing	Unbundle Parking Costs	0.00		
No	Parking Policy Pricing	On-street Market Pricing	0.00		
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00		
No	Transit Improvements	Provide BRT System	0.00		
No	Transit Improvements	Expand Transit Network	0.00		
No	Transit Improvements	Increase Transit Frequency	0.00		
	Transit Improvements	Transit Improvements Subtotal	0.00		
		Land Use and Site Enhancement Subtotal	0.00		
No	Commute	Implement Trip Reduction Program			
No	Commute	Transit Subsidy			
No	Commute	Implement Employee Parking "Cash Out"			
No	Commute	Workplace Parking Charge			
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00		
No	Commute	Market Commute Trip Reduction Option	0.00		
No	Commute	Employee Vanpool/Shuttle	0.00		2.00
No	Commute	Provide Ride Sharing Program			
	Commute	Commute Subtotal	0.00		

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	250.00
No	Use Low VOC Paint (Residential Exterior)	250.00
No	Use Low VOC Paint (Non-residential Interior)	250.00
No	Use Low VOC Paint (Non-residential Exterior)	250.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy	0.00	0.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape	0.00	0.00

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

Valiano - Vertical Development (Phase 1 - N 1 & 5)**San Diego County, Summer****1.0 Project Characteristics**

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0
Single Family Housing	165.00	Dwelling Unit	53.57	297,000.00	472

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MW hr)	720.49	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Assuming 3 construction crews for building construction, and paving and architectural coating would be spread out over the course of construction.

Off-road Equipment -

Off-road Equipment - Assuming 3 construction crews.

Off-road Equipment -

Architectural Coating - Rule 67

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, level 2 DPF, and 15% oxidation catalyst.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	ReapplicationRatePercent	10	0

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	75.00	181.00
tblConstructionPhase	NumDays	1,110.00	246.00
tblConstructionPhase	NumDays	75.00	246.00
tblConstructionPhase	PhaseEndDate	6/21/2018	10/11/2017
tblConstructionPhase	PhaseEndDate	9/20/2018	10/11/2017
tblConstructionPhase	PhaseStartDate	10/12/2017	2/1/2017
tblConstructionPhase	PhaseStartDate	10/12/2017	11/2/2016
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	84.70	0.00
tblFireplaces	NumberWood	53.90	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	9.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	9.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00

tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.09	0.00
tblSolidWaste	SolidWasteGenerationRate	180.40	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	10,033,719.95	0.00
tblWater	OutdoorWaterUseRate	1,191,481.35	0.00
tblWater	OutdoorWaterUseRate	6,325,606.05	0.00
tblWoodstoves	NumberCatalytic	7.70	0.00
tblWoodstoves	NumberNoncatalytic	7.70	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2016	12.8699	110.5446	76.9890	0.1177	0.8904	7.2030	8.0934	0.2394	6.7421	6.9815	0.0000	11,669.84 17	11,669.84 17	2.7280	0.0000	11,727.12 85
2017	36.8499	104.1201	77.6967	0.1222	1.0136	6.6915	7.7051	0.2721	6.2728	6.5448	0.0000	11,913.27 99	11,913.27 99	2.7238	0.0000	11,970.47 93
Total	49.7198	214.6647	154.6857	0.2399	1.9041	13.8945	15.7985	0.5114	13.0149	13.5263	0.0000	23,583.12 15	23,583.12 15	5.4517	0.0000	23,697.60 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					
2016	1.8154	9.3344	75.8122	0.1177	0.8904	0.1191	1.0095	0.2394	0.1159	0.3553	0.0000	11,669.8416	11,669.8416	2.7280	0.0000	11,727.1285
2017	26.5868	9.2259	77.7073	0.1222	1.0136	0.1173	1.1309	0.2721	0.1144	0.3865	0.0000	11,913.2799	11,913.2799	2.7238	0.0000	11,970.4793
Total	28.4022	18.5603	153.5194	0.2399	1.9041	0.2364	2.1404	0.5114	0.2303	0.7417	0.0000	23,583.1215	23,583.1215	5.4517	0.0000	23,697.6078

	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
Percent Reduction	42.88	91.35	0.75	0.00	0.00	98.30	86.45	0.00	98.23	94.52	0.00	0.00	0.00	0.00	0.00	0.00

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	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.4159	0.1580	13.6581	7.2000e-004	0.0000	0.0751	0.0751	0.0000	0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

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	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.4159	0.1580	13.6581	7.2000e-004	0.0000	0.0751	0.0751	0.0000	0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	11/2/2016	10/11/2017	5	246	
2	Paving	Paving	11/2/2016	10/11/2017	5	246	
3	Architectural Coating	Architectural Coating	2/1/2017	10/11/2017	5	181	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 561,330; Residential Outdoor: 187,110; Non-Residential Indoor: 65,340; Non-Residential Outdoor: 21,780 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	3	7.00	226	0.29
Building Construction	Forklifts	9	8.00	89	0.20
Building Construction	Generator Sets	3	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	9	7.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	27	74.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Building Construction - 2016**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	10.2187	85.5190	55.5199	0.0804		5.9022	5.9022		5.5454	5.5454		8,007.859 2	8,007.859 2	1.9861		8,049.567 1
Total	10.2187	85.5190	55.5199	0.0804		5.9022	5.9022		5.5454	5.5454		8,007.859 2	8,007.859 2	1.9861		8,049.567 1

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2504	2.2745	2.6698	5.7100e-003	0.1593	0.0344	0.1937	0.0455	0.0316	0.0771		572.6123	572.6123	4.4300e-003		572.7052
Worker	0.2587	0.3036	3.3106	7.7000e-003	0.6079	4.5600e-003	0.6125	0.1612	4.1900e-003	0.1654		642.7137	642.7137	0.0322		643.3899
Total	0.5090	2.5781	5.9804	0.0134	0.7672	0.0390	0.8061	0.2067	0.0358	0.2425		1,215.325 9	1,215.325 9	0.0366		1,216.095 1

3.2 Building Construction - 2016

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	0.9794	5.6837	52.2331	0.0804		0.0609	0.0609		0.0609	0.0609	0.0000	8,007.859 2	8,007.859 2	1.9861		8,049.567 0
Total	0.9794	5.6837	52.2331	0.0804		0.0609	0.0609		0.0609	0.0609	0.0000	8,007.859 2	8,007.859 2	1.9861		8,049.567 0

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2504	2.2745	2.6698	5.7100e-003	0.1593	0.0344	0.1937	0.0455	0.0316	0.0771		572.6123	572.6123	4.4300e-003		572.7052
Worker	0.2587	0.3036	3.3106	7.7000e-003	0.6079	4.5600e-003	0.6125	0.1612	4.1900e-003	0.1654		642.7137	642.7137	0.0322		643.3899
Total	0.5090	2.5781	5.9804	0.0134	0.7672	0.0390	0.8061	0.2067	0.0358	0.2425		1,215.325 9	1,215.325 9	0.0366		1,216.095 1

3.2 Building Construction - 2017**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	9.3071	79.2170	54.3874	0.0804		5.3437	5.3437		5.0189	5.0189		7,919.4160	7,919.4160	1.9491		7,960.3471
Total	9.3071	79.2170	54.3874	0.0804		5.3437	5.3437		5.0189	5.0189		7,919.4160	7,919.4160	1.9491		7,960.3471

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2295	2.0340	2.5059	5.7000e-003	0.1593	0.0299	0.1892	0.0455	0.0275	0.0729		562.9389	562.9389	4.1800e-003		563.0268
Worker	0.2351	0.2759	2.9943	7.7000e-003	0.6079	4.4200e-003	0.6123	0.1612	4.0800e-003	0.1653		617.9129	617.9129	0.0298		618.5386
Total	0.4646	2.3099	5.5003	0.0134	0.7672	0.0343	0.8015	0.2067	0.0315	0.2382		1,180.8518	1,180.8518	0.0340		1,181.5653

3.2 Building Construction - 2017

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	0.9794	5.6837	52.2331	0.0804		0.0609	0.0609		0.0609	0.0609	0.0000	7,919.4160	7,919.4160	1.9491		7,960.3471
Total	0.9794	5.6837	52.2331	0.0804		0.0609	0.0609		0.0609	0.0609	0.0000	7,919.4160	7,919.4160	1.9491		7,960.3471

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2295	2.0340	2.5059	5.7000e-003	0.1593	0.0299	0.1892	0.0455	0.0275	0.0729		562.9389	562.9389	4.1800e-003		563.0268
Worker	0.2351	0.2759	2.9943	7.7000e-003	0.6079	4.4200e-003	0.6123	0.1612	4.0800e-003	0.1653		617.9129	617.9129	0.0298		618.5386
Total	0.4646	2.3099	5.5003	0.0134	0.7672	0.0343	0.8015	0.2067	0.0315	0.2382		1,180.8518	1,180.8518	0.0340		1,181.5653

3.3 Paving - 2016**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	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0524	0.0615	0.6711	1.5600e-003	0.1232	9.2000e-004	0.1242	0.0327	8.5000e-004	0.0335		130.2798	130.2798	6.5300e-003		130.4169
Total	0.0524	0.0615	0.6711	1.5600e-003	0.1232	9.2000e-004	0.1242	0.0327	8.5000e-004	0.0335		130.2798	130.2798	6.5300e-003		130.4169

3.3 Paving - 2016**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	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0524	0.0615	0.6711	1.5600e-003	0.1232	9.2000e-004	0.1242	0.0327	8.5000e-004	0.0335		130.2798	130.2798	6.5300e-003		130.4169
Total	0.0524	0.0615	0.6711	1.5600e-003	0.1232	9.2000e-004	0.1242	0.0327	8.5000e-004	0.0335		130.2798	130.2798	6.5300e-003		130.4169

3.3 Paving - 2017**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	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0477	0.0559	0.6070	1.5600e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		125.2526	125.2526	6.0400e-003		125.3794
Total	0.0477	0.0559	0.6070	1.5600e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		125.2526	125.2526	6.0400e-003		125.3794

3.3 Paving - 2017**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	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,281.0588	2,281.0588	0.6989		2,295.7360

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0477	0.0559	0.6070	1.5600e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		125.2526	125.2526	6.0400e-003		125.3794
Total	0.0477	0.0559	0.6070	1.5600e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		125.2526	125.2526	6.0400e-003		125.3794

3.4 Architectural Coating - 2017**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	24.7432					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	25.0755	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0477	0.0559	0.6070	1.5600e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		125.2526	125.2526	6.0400e-003		125.3794
Total	0.0477	0.0559	0.6070	1.5600e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		125.2526	125.2526	6.0400e-003		125.3794

3.4 Architectural Coating - 2017

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	24.7432					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4481	281.4481	0.0297		282.0721
Total	24.7729	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4481	281.4481	0.0297		282.0721

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0477	0.0559	0.6070	1.5600e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		125.2526	125.2526	6.0400e-003		125.3794
Total	0.0477	0.0559	0.6070	1.5600e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		125.2526	125.2526	6.0400e-003		125.3794

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133
Unmitigated	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751		24.5114	24.5114	0.0239		25.0133
Total	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751		24.5114	24.5114	0.0239		25.0133
Total	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

7.0 Water Detail

7.1 Mitigation Measures Water**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

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

Valiano - Vertical Development (Phase 1 - N 1 & 5)
San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0
Single Family Housing	165.00	Dwelling Unit	53.57	297,000.00	472

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Assuming 3 construction crews for building construction, and paving and architectural coating would be spread out over the course of construction.

Off-road Equipment -

Off-road Equipment - Assuming 3 construction crews.

Off-road Equipment -

Architectural Coating - Rule 67

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, level 2 DPF, and 15% oxidation catalyst.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	ReapplicationRatePercent	10	0

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	75.00	181.00
tblConstructionPhase	NumDays	1,110.00	246.00
tblConstructionPhase	NumDays	75.00	246.00
tblConstructionPhase	PhaseEndDate	6/21/2018	10/11/2017
tblConstructionPhase	PhaseEndDate	9/20/2018	10/11/2017
tblConstructionPhase	PhaseStartDate	10/12/2017	2/1/2017
tblConstructionPhase	PhaseStartDate	10/12/2017	11/2/2016
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	84.70	0.00
tblFireplaces	NumberWood	53.90	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	9.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	9.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00

tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.09	0.00
tblSolidWaste	SolidWasteGenerationRate	180.40	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	10,033,719.95	0.00
tblWater	OutdoorWaterUseRate	1,191,481.35	0.00
tblWater	OutdoorWaterUseRate	6,325,606.05	0.00
tblWoodstoves	NumberCatalytic	7.70	0.00
tblWoodstoves	NumberNoncatalytic	7.70	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2016	12.9279	110.6442	77.7988	0.1171	0.8904	7.2034	8.0938	0.2394	6.7425	6.9818	0.0000	11,618.4056	11,618.4056	2.7281	0.0000	11,675.6948
2017	36.9038	104.2156	78.4539	0.1215	1.0136	6.6918	7.7054	0.2721	6.2731	6.5451	0.0000	11,856.0462	11,856.0462	2.7239	0.0000	11,913.2480
Total	49.8316	214.8599	156.2527	0.2386	1.9041	13.8951	15.7992	0.5114	13.0155	13.5270	0.0000	23,474.4518	23,474.4518	5.4520	0.0000	23,588.9427

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					
2016	1.8734	9.4341	76.6219	0.1171	0.8904	0.1195	1.0099	0.2394	0.1162	0.3556	0.0000	11,618.4056	11,618.4056	2.7281	0.0000	11,675.6948
2017	26.6407	9.3214	78.4645	0.1215	1.0136	0.1176	1.1312	0.2721	0.1147	0.3867	0.0000	11,856.0462	11,856.0462	2.7239	0.0000	11,913.2480
Total	28.5140	18.7555	155.0864	0.2386	1.9041	0.2370	2.1411	0.5114	0.2309	0.7423	0.0000	23,474.4517	23,474.4517	5.4520	0.0000	23,588.9427

	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
Percent Reduction	42.78	91.27	0.75	0.00	0.00	98.29	86.45	0.00	98.23	94.51	0.00	0.00	0.00	0.00	0.00	0.00

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	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.4159	0.1580	13.6581	7.2000e-004	0.0000	0.0751	0.0751	0.0000	0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

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	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.4159	0.1580	13.6581	7.2000e-004	0.0000	0.0751	0.0751	0.0000	0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	11/2/2016	10/11/2017	5	246	
2	Paving	Paving	11/2/2016	10/11/2017	5	246	
3	Architectural Coating	Architectural Coating	2/1/2017	10/11/2017	5	181	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 561,330; Residential Outdoor: 187,110; Non-Residential Indoor: 65,340; Non-Residential Outdoor: 21,780 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	3	7.00	226	0.29
Building Construction	Forklifts	9	8.00	89	0.20
Building Construction	Generator Sets	3	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	9	7.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	27	74.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Building Construction - 2016

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	10.2187	85.5190	55.5199	0.0804		5.9022	5.9022		5.5454	5.5454		8,007.859 2	8,007.859 2	1.9861		8,049.567 1
Total	10.2187	85.5190	55.5199	0.0804		5.9022	5.9022		5.5454	5.5454		8,007.859 2	8,007.859 2	1.9861		8,049.567 1

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2896	2.3297	3.5931	5.6800e-003	0.1593	0.0348	0.1941	0.0455	0.0320	0.0774		568.2221	568.2221	4.5400e-003		568.3174
Worker	0.2742	0.3406	3.2162	7.2300e-003	0.6079	4.5600e-003	0.6125	0.1612	4.1900e-003	0.1654		603.5969	603.5969	0.0322		604.2731
Total	0.5638	2.6703	6.8093	0.0129	0.7672	0.0393	0.8065	0.2067	0.0362	0.2428		1,171.819 0	1,171.819 0	0.0367		1,172.590 5

3.2 Building Construction - 2016

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	0.9794	5.6837	52.2331	0.0804		0.0609	0.0609		0.0609	0.0609	0.0000	8,007.8592	8,007.8592	1.9861		8,049.5670
Total	0.9794	5.6837	52.2331	0.0804		0.0609	0.0609		0.0609	0.0609	0.0000	8,007.8592	8,007.8592	1.9861		8,049.5670

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2896	2.3297	3.5931	5.6800e-003	0.1593	0.0348	0.1941	0.0455	0.0320	0.0774		568.2221	568.2221	4.5400e-003		568.3174
Worker	0.2742	0.3406	3.2162	7.2300e-003	0.6079	4.5600e-003	0.6125	0.1612	4.1900e-003	0.1654		603.5969	603.5969	0.0322		604.2731
Total	0.5638	2.6703	6.8093	0.0129	0.7672	0.0393	0.8065	0.2067	0.0362	0.2428		1,171.8190	1,171.8190	0.0367		1,172.5905

3.2 Building Construction - 2017**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	9.3071	79.2170	54.3874	0.0804		5.3437	5.3437		5.0189	5.0189		7,919.4160	7,919.4160	1.9491		7,960.3471
Total	9.3071	79.2170	54.3874	0.0804		5.3437	5.3437		5.0189	5.0189		7,919.4160	7,919.4160	1.9491		7,960.3471

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2647	2.0822	3.4032	5.6700e-003	0.1593	0.0302	0.1895	0.0455	0.0277	0.0732		558.6093	558.6093	4.3000e-003		558.6995
Worker	0.2484	0.3096	2.8947	7.2300e-003	0.6079	4.4200e-003	0.6123	0.1612	4.0800e-003	0.1653		580.2696	580.2696	0.0298		580.8953
Total	0.5131	2.3917	6.2979	0.0129	0.7672	0.0346	0.8018	0.2067	0.0318	0.2385		1,138.8789	1,138.8789	0.0341		1,139.5948

3.2 Building Construction - 2017

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	0.9794	5.6837	52.2331	0.0804		0.0609	0.0609		0.0609	0.0609	0.0000	7,919.4160	7,919.4160	1.9491		7,960.3471
Total	0.9794	5.6837	52.2331	0.0804		0.0609	0.0609		0.0609	0.0609	0.0000	7,919.4160	7,919.4160	1.9491		7,960.3471

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2647	2.0822	3.4032	5.6700e-003	0.1593	0.0302	0.1895	0.0455	0.0277	0.0732		558.6093	558.6093	4.3000e-003		558.6995
Worker	0.2484	0.3096	2.8947	7.2300e-003	0.6079	4.4200e-003	0.6123	0.1612	4.0800e-003	0.1653		580.2696	580.2696	0.0298		580.8953
Total	0.5131	2.3917	6.2979	0.0129	0.7672	0.0346	0.8018	0.2067	0.0318	0.2385		1,138.8789	1,138.8789	0.0341		1,139.5948

3.3 Paving - 2016**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	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0556	0.0690	0.6519	1.4700e-003	0.1232	9.2000e-004	0.1242	0.0327	8.5000e-004	0.0335		122.3507	122.3507	6.5300e-003		122.4878
Total	0.0556	0.0690	0.6519	1.4700e-003	0.1232	9.2000e-004	0.1242	0.0327	8.5000e-004	0.0335		122.3507	122.3507	6.5300e-003		122.4878

3.3 Paving - 2016**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	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0556	0.0690	0.6519	1.4700e-003	0.1232	9.2000e-004	0.1242	0.0327	8.5000e-004	0.0335		122.3507	122.3507	6.5300e-003		122.4878
Total	0.0556	0.0690	0.6519	1.4700e-003	0.1232	9.2000e-004	0.1242	0.0327	8.5000e-004	0.0335		122.3507	122.3507	6.5300e-003		122.4878

3.3 Paving - 2017**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	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0504	0.0628	0.5868	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		117.6222	117.6222	6.0400e-003		117.7491
Total	0.0504	0.0628	0.5868	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		117.6222	117.6222	6.0400e-003		117.7491

3.3 Paving - 2017**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	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,281.0588	2,281.0588	0.6989		2,295.7360

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0504	0.0628	0.5868	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		117.6222	117.6222	6.0400e-003		117.7491
Total	0.0504	0.0628	0.5868	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		117.6222	117.6222	6.0400e-003		117.7491

3.4 Architectural Coating - 2017**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	24.7432					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	25.0755	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0504	0.0628	0.5868	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		117.6222	117.6222	6.0400e-003		117.7491
Total	0.0504	0.0628	0.5868	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		117.6222	117.6222	6.0400e-003		117.7491

3.4 Architectural Coating - 2017

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	24.7432					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4481	281.4481	0.0297		282.0721
Total	24.7729	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4481	281.4481	0.0297		282.0721

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0504	0.0628	0.5868	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		117.6222	117.6222	6.0400e-003		117.7491
Total	0.0504	0.0628	0.5868	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		117.6222	117.6222	6.0400e-003		117.7491

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133
Unmitigated	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751		24.5114	24.5114	0.0239		25.0133
Total	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751		24.5114	24.5114	0.0239		25.0133
Total	0.4159	0.1580	13.6581	7.2000e-004		0.0751	0.0751		0.0751	0.0751	0.0000	24.5114	24.5114	0.0239	0.0000	25.0133

7.0 Water Detail

7.1 Mitigation Measures Water**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

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

Valiano - Vertical Development (Phase 1 - N 1 & 5)**San Diego County, Mitigation Report****Construction Mitigation Summary**

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.01	0.92	0.01	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.85	0.90	0.04	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.84	0.95	-0.14	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	Tier 4 Final	1	1	Level 2	15.00
Cranes	Diesel	Tier 4 Final	3	3	Level 2	15.00
Forklifts	Diesel	Tier 4 Final	9	9	Level 2	15.00
Generator Sets	Diesel	Tier 4 Final	3	3	Level 2	15.00
Pavers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Paving Equipment	Diesel	Tier 4 Final	2	2	Level 2	15.00
Rollers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	9	9	Level 2	15.00
Welders	Diesel	Tier 4 Final	3	3	Level 2	15.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					
Air Compressors	3.00700E-002	1.97740E-001	1.69060E-001	2.70000E-004	1.56900E-002	1.56900E-002	0.00000E+000	2.31070E+001	2.31070E+001	2.44000E-003	0.00000E+000	2.31582E+001
Cranes	2.13280E-001	2.53120E+000	9.02850E-001	1.82000E-003	1.13230E-001	1.04170E-001	0.00000E+000	1.69538E+002	1.69538E+002	5.18000E-002	0.00000E+000	1.70626E+002
Forklifts	2.36610E-001	2.04638E+000	1.38545E+000	1.69000E-003	1.69250E-001	1.55710E-001	0.00000E+000	1.57352E+002	1.57352E+002	4.80800E-002	0.00000E+000	1.58362E+002
Generator Sets	2.14820E-001	1.67119E+000	1.39434E+000	2.43000E-003	1.13320E-001	1.13320E-001	0.00000E+000	2.08562E+002	2.08562E+002	1.72700E-002	0.00000E+000	2.08924E+002
Pavers	9.03500E-002	1.01230E+000	6.98350E-001	1.11000E-003	4.99100E-002	4.59200E-002	0.00000E+000	1.03380E+002	1.03380E+002	3.15900E-002	0.00000E+000	1.04043E+002
Paving Equipment	7.05800E-002	8.06250E-001	6.24300E-001	9.90000E-004	4.02200E-002	3.70100E-002	0.00000E+000	9.18241E+001	9.18241E+001	2.80600E-002	0.00000E+000	9.24133E+001
Rollers	7.76000E-002	7.22830E-001	4.90720E-001	6.40000E-004	5.25300E-002	4.83300E-002	0.00000E+000	6.00137E+001	6.00137E+001	1.83400E-002	0.00000E+000	6.03988E+001
Tractors/Loaders/Backhoes	3.10880E-001	2.98412E+000	2.32192E+000	3.01000E-003	2.25410E-001	2.07380E-001	0.00000E+000	2.80498E+002	2.80498E+002	8.57100E-002	0.00000E+000	2.82298E+002
Welders	1.88790E-001	6.46280E-001	7.09450E-001	9.40000E-004	4.80700E-002	4.80700E-002	0.00000E+000	6.94534E+001	6.94534E+001	1.53500E-002	0.00000E+000	6.97758E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					
Air Compressors	2.69000E-003	9.91000E-003	1.65830E-001	2.70000E-004	1.80000E-004	1.80000E-004	0.00000E+000	2.31069E+001	2.31069E+001	2.44000E-003	0.00000E+000	2.31582E+001
Cranes	2.23900E-002	8.24800E-002	8.21080E-001	1.82000E-003	1.49000E-003	1.49000E-003	0.00000E+000	1.69538E+002	1.69538E+002	5.18000E-002	0.00000E+000	1.70626E+002
Forklifts	2.08500E-002	7.68000E-002	1.28586E+000	1.69000E-003	1.39000E-003	1.39000E-003	0.00000E+000	1.57352E+002	1.57352E+002	4.80800E-002	0.00000E+000	1.58362E+002
Generator Sets	2.42700E-002	8.94000E-002	1.49680E+000	2.43000E-003	1.62000E-003	1.62000E-003	0.00000E+000	2.08561E+002	2.08561E+002	1.72700E-002	0.00000E+000	2.08924E+002
Pavers	1.36700E-002	5.03400E-002	8.42790E-001	1.11000E-003	9.10000E-004	9.10000E-004	0.00000E+000	1.03380E+002	1.03380E+002	3.15900E-002	0.00000E+000	1.04043E+002
Paving Equipment	1.21800E-002	4.48700E-002	7.51290E-001	9.90000E-004	8.10000E-004	8.10000E-004	0.00000E+000	9.18240E+001	9.18240E+001	2.80600E-002	0.00000E+000	9.24132E+001
Rollers	7.91000E-003	2.91500E-002	4.88020E-001	6.40000E-004	5.30000E-004	5.30000E-004	0.00000E+000	6.00137E+001	6.00137E+001	1.83400E-002	0.00000E+000	6.03988E+001
Tractors/Loaders/Backhoes	3.67900E-002	1.35500E-001	2.26858E+000	3.01000E-003	2.45000E-003	2.45000E-003	0.00000E+000	2.80497E+002	2.80497E+002	8.57100E-002	0.00000E+000	2.82297E+002
Welders	1.61700E-002	3.14900E-001	5.52340E-001	9.40000E-004	5.40000E-004	5.40000E-004	0.00000E+000	6.94533E+001	6.94533E+001	1.53500E-002	0.00000E+000	6.97757E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	9.10542E-001	9.49884E-001	1.91056E-002	0.00000E+000	9.88528E-001	9.88528E-001	0.00000E+000	1.29831E-006	1.29831E-006	0.00000E+000	0.00000E+000	1.29544E-006
Cranes	8.95021E-001	9.67415E-001	9.05688E-002	0.00000E+000	9.86841E-001	9.85696E-001	0.00000E+000	1.23866E-006	1.23866E-006	0.00000E+000	0.00000E+000	1.17216E-006
Forklifts	9.11880E-001	9.62470E-001	7.18828E-002	0.00000E+000	9.91787E-001	9.91073E-001	0.00000E+000	1.20748E-006	1.20748E-006	0.00000E+000	0.00000E+000	1.19978E-006
Generator Sets	8.87022E-001	9.46505E-001	7.34828E-002	0.00000E+000	9.85704E-001	9.85704E-001	0.00000E+000	1.19869E-006	1.19869E-006	0.00000E+000	0.00000E+000	1.19661E-006
Pavers	8.48700E-001	9.50272E-001	2.06830E-001	0.00000E+000	9.81767E-001	9.80183E-001	0.00000E+000	1.16077E-006	1.16077E-006	0.00000E+000	0.00000E+000	1.15336E-006
Paving Equipment	8.27430E-001	9.44347E-001	2.03412E-001	0.00000E+000	9.79861E-001	9.78114E-001	0.00000E+000	1.19794E-006	1.19794E-006	0.00000E+000	0.00000E+000	1.19031E-006
Rollers	8.98067E-001	9.59672E-001	5.50212E-003	0.00000E+000	9.89911E-001	9.89034E-001	0.00000E+000	1.33303E-006	1.33303E-006	0.00000E+000	0.00000E+000	1.15896E-006
Tractors/Loaders/Balckhoes	8.81659E-001	9.54593E-001	2.29724E-002	0.00000E+000	9.89131E-001	9.88186E-001	0.00000E+000	1.17648E-006	1.17648E-006	0.00000E+000	0.00000E+000	1.16898E-006
Welders	9.14349E-001	5.12750E-001	2.21453E-001	0.00000E+000	9.88766E-001	9.88766E-001	0.00000E+000	1.15185E-006	1.15185E-006	0.00000E+000	0.00000E+000	1.28985E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input	Mitigation Input	Mitigation Input			
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	0.00		
Yes	Clean Paved Road	% PM Reduction	0.00				

Phase	Source	Unmitigated		Mitigated		Percent Reduction	
		PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.09	0.02	0.09	0.02	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.01	0.00	0.01	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	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
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.10	0.32		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			
No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				

No	Commute	Transit Subsidy			
No	Commute	Implement Employee Parking "Cash Out"			
No	Commute	Workplace Parking Charge			
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00		
No	Commute	Market Commute Trip Reduction Option	0.00		
No	Commute	Employee Vanpool/Shuttle	0.00	2.00	
No	Commute	Provide Ride Sharing Program			
	Commute	Commute Subtotal	0.00		
No	School Trip	Implement School Bus Program	0.00		
		Total VMT Reduction	0.00		

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	250.00
No	Use Low VOC Paint (Residential Exterior)	250.00
No	Use Low VOC Paint (Non-residential Interior)	250.00
No	Use Low VOC Paint (Non-residential Exterior)	250.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy	0.00	0.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
No	Use Water Efficient Irrigation Systems	6.10	

No	Water Efficient Landscape	0.00	0.00
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Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

Valiano - Vertical Development (Phase 2 - N 2)
San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	58.00	Dwelling Unit	18.83	104,400.00	166

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Assuming 4 construction crews for building construction, and paving and architectural coating would be spread out over the course of construction.

Off-road Equipment -

Off-road Equipment - Assuming 4 construction crews.

Off-road Equipment -

Trips and VMT -

Architectural Coating - Rule 67

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, level 2 DPF, and 15% oxidation catalyst.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00

[illegible]

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	32.00
tblConstructionPhase	NumDays	300.00	75.00
tblConstructionPhase	NumDays	20.00	75.00
tblConstructionPhase	PhaseEndDate	3/9/2018	1/24/2018
tblConstructionPhase	PhaseEndDate	5/9/2018	1/24/2018
tblConstructionPhase	PhaseStartDate	1/25/2018	12/12/2017
tblConstructionPhase	PhaseStartDate	1/25/2018	10/12/2017
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	19.25	0.00
tblFireplaces	NumberWood	12.25	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	12.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	41.00	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	2,280,390.90	0.00
tblWater	OutdoorWaterUseRate	1,437,637.74	0.00
tblWoodstoves	NumberCatalytic	1.75	0.00
tblWoodstoves	NumberNoncatalytic	1.75	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2017	39.4238	128.5586	90.7837	0.1367	0.2812	8.4434	8.7246	0.0751	7.9188	7.9940	0.0000	13,474.4067	13,474.4067	3.3406	0.0000	13,544.5594
2018	37.3485	112.6236	88.0159	0.1367	0.2812	7.0727	7.3539	0.0751	6.6392	6.7143	0.0000	13,307.8317	13,307.8317	3.2928	0.0000	13,376.9812
Total	76.7723	241.1822	178.7996	0.2734	0.5624	15.5162	16.0786	0.1502	14.5580	14.7082	0.0000	26,782.2384	26,782.2384	6.6334	0.0000	26,921.5406

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					
2017	26.3848	9.1533	90.0761	0.1367	0.2812	0.1083	0.3895	0.0751	0.1078	0.1829	0.0000	13,474.4067	13,474.4067	3.3406	0.0000	13,544.5594
2018	26.3739	9.1104	89.9407	0.1367	0.2812	0.1079	0.3891	0.0751	0.1074	0.1826	0.0000	13,307.8317	13,307.8317	3.2928	0.0000	13,376.9812
Total	52.7587	18.2638	180.0169	0.2734	0.5624	0.2163	0.7787	0.1502	0.2152	0.3655	0.0000	26,782.2384	26,782.2384	6.6334	0.0000	26,921.5406

	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
Percent Reduction	31.28	92.43	-0.68	0.00	0.00	98.61	95.16	0.00	98.52	97.52	0.00	0.00	0.00	0.00	0.00	0.00

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	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1462	0.0555	4.8010	2.5000e-004	0.0000	0.0264	0.0264	0.0000	0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925

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	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1462	0.0555	4.8010	2.5000e-004	0.0000	0.0264	0.0264	0.0000	0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	10/12/2017	1/24/2018	5	75	
2	Paving	Paving	10/12/2017	1/24/2018	5	75	
3	Architectural Coating	Architectural Coating	12/12/2017	1/24/2018	5	32	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 127,575; Residential Outdoor: 42,525; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	4	7.00	226	0.29
Building Construction	Forklifts	12	8.00	89	0.20
Building Construction	Generator Sets	4	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	12	7.00	97	0.37
Building Construction	Welders	4	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	36	13.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Building Construction - 2017

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	12.4095	105.6226	72.5166	0.1072		7.1249	7.1249		6.6919	6.6919		10,559.22 13	10,559.22 13	2.5988		10,613.79 61
Total	12.4095	105.6226	72.5166	0.1072		7.1249	7.1249		6.6919	6.6919		10,559.22 13	10,559.22 13	2.5988		10,613.79 61

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0383	0.3390	0.4177	9.5000e-004	0.0266	4.9800e-003	0.0315	7.5800e-003	4.5800e-003	0.0122		93.8232	93.8232	7.0000e-004		93.8378
Worker	0.0413	0.0485	0.5260	1.3500e-003	0.1068	7.8000e-004	0.1076	0.0283	7.2000e-004	0.0290		108.5523	108.5523	5.2300e-003		108.6622
Total	0.0796	0.3875	0.9437	2.3000e-003	0.1333	5.7600e-003	0.1391	0.0359	5.3000e-003	0.0412		202.3754	202.3754	5.9300e-003		202.5000

3.2 Building Construction - 2017

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	1.3059	7.5782	69.6441	0.1072		0.0812	0.0812		0.0812	0.0812	0.0000	10,559.22 13	10,559.22 13	2.5988		10,613.79 61
Total	1.3059	7.5782	69.6441	0.1072		0.0812	0.0812		0.0812	0.0812	0.0000	10,559.22 13	10,559.22 13	2.5988		10,613.79 61

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0383	0.3390	0.4177	9.5000e-004	0.0266	4.9800e-003	0.0315	7.5800e-003	4.5800e-003	0.0122		93.8232	93.8232	7.0000e-004		93.8378
Worker	0.0413	0.0485	0.5260	1.3500e-003	0.1068	7.8000e-004	0.1076	0.0283	7.2000e-004	0.0290		108.5523	108.5523	5.2300e-003		108.6622
Total	0.0796	0.3875	0.9437	2.3000e-003	0.1333	5.7600e-003	0.1391	0.0359	5.3000e-003	0.0412		202.3754	202.3754	5.9300e-003		202.5000

3.2 Building Construction - 2018**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	10.6747	93.0434	70.1306	0.1072		5.9771	5.9771		5.6191	5.6191		10,439.7558	10,439.7558	2.5548		10,493.4068
Total	10.6747	93.0434	70.1306	0.1072		5.9771	5.9771		5.6191	5.6191		10,439.7558	10,439.7558	2.5548		10,493.4068

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0360	0.3062	0.3980	9.5000e-004	0.0266	4.6200e-003	0.0312	7.5700e-003	4.2500e-003	0.0118		92.2121	92.2121	6.8000e-004		92.2264
Worker	0.0377	0.0442	0.4775	1.3500e-003	0.1068	7.6000e-004	0.1076	0.0283	7.0000e-004	0.0290		104.4805	104.4805	4.8700e-003		104.5828
Total	0.0737	0.3504	0.8755	2.3000e-003	0.1333	5.3800e-003	0.1387	0.0359	4.9500e-003	0.0409		196.6926	196.6926	5.5500e-003		196.8092

3.2 Building Construction - 2018

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	1.3059	7.5782	69.6441	0.1072		0.0812	0.0812		0.0812	0.0812	0.0000	10,439.7558	10,439.7558	2.5548		10,493.4068
Total	1.3059	7.5782	69.6441	0.1072		0.0812	0.0812		0.0812	0.0812	0.0000	10,439.7558	10,439.7558	2.5548		10,493.4068

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0360	0.3062	0.3980	9.5000e-004	0.0266	4.6200e-003	0.0312	7.5700e-003	4.2500e-003	0.0118		92.2121	92.2121	6.8000e-004		92.2264
Worker	0.0377	0.0442	0.4775	1.3500e-003	0.1068	7.6000e-004	0.1076	0.0283	7.0000e-004	0.0290		104.4805	104.4805	4.8700e-003		104.5828
Total	0.0737	0.3504	0.8755	2.3000e-003	0.1333	5.3800e-003	0.1387	0.0359	4.9500e-003	0.0409		196.6926	196.6926	5.5500e-003		196.8092

3.3 Paving - 2017**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	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0477	0.0559	0.6070	1.5600e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		125.2526	125.2526	6.0400e-003		125.3794
Total	0.0477	0.0559	0.6070	1.5600e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		125.2526	125.2526	6.0400e-003		125.3794

3.3 Paving - 2017**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	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,281.0588	2,281.0588	0.6989		2,295.7360

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0477	0.0559	0.6070	1.5600e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		125.2526	125.2526	6.0400e-003		125.3794
Total	0.0477	0.0559	0.6070	1.5600e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		125.2526	125.2526	6.0400e-003		125.3794

3.3 Paving - 2018**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	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0435	0.0510	0.5510	1.5600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		120.5544	120.5544	5.6200e-003		120.6724
Total	0.0435	0.0510	0.5510	1.5600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		120.5544	120.5544	5.6200e-003		120.6724

3.3 Paving - 2018**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	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0435	0.0510	0.5510	1.5600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		120.5544	120.5544	5.6200e-003		120.6724
Total	0.0435	0.0510	0.5510	1.5600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		120.5544	120.5544	5.6200e-003		120.6724

3.4 Architectural Coating - 2017**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	24.6379					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	24.9702	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.5300e-003	0.0112	0.1214	3.1000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.7000e-004	6.7000e-003		25.0505	25.0505	1.2100e-003		25.0759
Total	9.5300e-003	0.0112	0.1214	3.1000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.7000e-004	6.7000e-003		25.0505	25.0505	1.2100e-003		25.0759

3.4 Architectural Coating - 2017**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	24.6379					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4481	281.4481	0.0297		282.0721
Total	24.6676	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4481	281.4481	0.0297		282.0721

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.5300e-003	0.0112	0.1214	3.1000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.7000e-004	6.7000e-003		25.0505	25.0505	1.2100e-003		25.0759
Total	9.5300e-003	0.0112	0.1214	3.1000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.7000e-004	6.7000e-003		25.0505	25.0505	1.2100e-003		25.0759

3.4 Architectural Coating - 2018

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	24.6379					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	24.9366	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	8.6900e-003	0.0102	0.1102	3.1000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.6000e-004	6.7000e-003		24.1109	24.1109	1.1200e-003		24.1345
Total	8.6900e-003	0.0102	0.1102	3.1000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.6000e-004	6.7000e-003		24.1109	24.1109	1.1200e-003		24.1345

3.4 Architectural Coating - 2018

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	24.6379					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4485	281.4485	0.0267		282.0102
Total	24.6676	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4485	281.4485	0.0267		282.0102

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	8.6900e-003	0.0102	0.1102	3.1000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.6000e-004	6.7000e-003		24.1109	24.1109	1.1200e-003		24.1345
Total	8.6900e-003	0.0102	0.1102	3.1000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.6000e-004	6.7000e-003		24.1109	24.1109	1.1200e-003		24.1345

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925
Unmitigated	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925

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					
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264		8.6160	8.6160	8.4000e-003		8.7925
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925

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					
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264		8.6160	8.6160	8.4000e-003		8.7925
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925

7.0 Water Detail

7.1 Mitigation Measures Water**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

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

Valiano - Vertical Development (Phase 2 - N 2)
San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	58.00	Dwelling Unit	18.83	104,400.00	166

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Assuming 4 construction crews for building construction, and paving and architectural coating would be spread out over the course of construction.

Off-road Equipment -

Off-road Equipment - Assuming 4 construction crews.

Off-road Equipment -

Trips and VMT -

Architectural Coating - Rule 67

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, level 2 DPF, and 15% oxidation catalyst.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00

[illegible]

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	32.00
tblConstructionPhase	NumDays	300.00	75.00
tblConstructionPhase	NumDays	20.00	75.00
tblConstructionPhase	PhaseEndDate	3/9/2018	1/24/2018
tblConstructionPhase	PhaseEndDate	5/9/2018	1/24/2018
tblConstructionPhase	PhaseStartDate	1/25/2018	12/12/2017
tblConstructionPhase	PhaseStartDate	1/25/2018	10/12/2017
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	19.25	0.00
tblFireplaces	NumberWood	12.25	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	12.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	41.00	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	2,280,390.90	0.00
tblWater	OutdoorWaterUseRate	1,437,637.74	0.00
tblWoodstoves	NumberCatalytic	1.75	0.00
tblWoodstoves	NumberNoncatalytic	1.75	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2017	39.4352	128.5808	90.8915	0.1365	0.2812	8.4435	8.7247	0.0751	7.9189	7.9940	0.0000	13,457.9156	13,457.9156	3.3406	0.0000	13,528.0687
2018	37.3586	112.6435	88.1175	0.1365	0.2812	7.0728	7.3540	0.0751	6.6392	6.7143	0.0000	13,291.9307	13,291.9307	3.2929	0.0000	13,361.0805
Total	76.7939	241.2243	179.0090	0.2730	0.5624	15.5163	16.0787	0.1502	14.5581	14.7083	0.0000	26,749.8463	26,749.8463	6.6335	0.0000	26,889.1492

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					
2017	26.3962	9.1755	90.1839	0.1365	0.2812	0.1084	0.3896	0.0751	0.1078	0.1830	0.0000	13,457.9156	13,457.9156	3.3406	0.0000	13,528.0687
2018	26.3840	9.1304	90.0423	0.1365	0.2812	0.1080	0.3892	0.0751	0.1075	0.1826	0.0000	13,291.9307	13,291.9307	3.2929	0.0000	13,361.0805
Total	52.7802	18.3059	180.2262	0.2730	0.5624	0.2164	0.7788	0.1502	0.2153	0.3656	0.0000	26,749.8462	26,749.8462	6.6335	0.0000	26,889.1492

	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
Percent Reduction	31.27	92.41	-0.68	0.00	0.00	98.61	95.16	0.00	98.52	97.51	0.00	0.00	0.00	0.00	0.00	0.00

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	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1462	0.0555	4.8010	2.5000e-004	0.0000	0.0264	0.0264	0.0000	0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925

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	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1462	0.0555	4.8010	2.5000e-004	0.0000	0.0264	0.0264	0.0000	0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	10/12/2017	1/24/2018	5	75	
2	Paving	Paving	10/12/2017	1/24/2018	5	75	
3	Architectural Coating	Architectural Coating	12/12/2017	1/24/2018	5	32	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 127,575; Residential Outdoor: 42,525; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	4	7.00	226	0.29
Building Construction	Forklifts	12	8.00	89	0.20
Building Construction	Generator Sets	4	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	12	7.00	97	0.37
Building Construction	Welders	4	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	36	13.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Building Construction - 2017

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	12.4095	105.6226	72.5166	0.1072		7.1249	7.1249		6.6919	6.6919		10,559.22 13	10,559.22 13	2.5988		10,613.79 61
Total	12.4095	105.6226	72.5166	0.1072		7.1249	7.1249		6.6919	6.6919		10,559.22 13	10,559.22 13	2.5988		10,613.79 61

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0441	0.3470	0.5672	9.5000e-004	0.0266	5.0300e-003	0.0316	7.5800e-003	4.6200e-003	0.0122		93.1016	93.1016	7.2000e-004		93.1166
Worker	0.0436	0.0544	0.5085	1.2700e-003	0.1068	7.8000e-004	0.1076	0.0283	7.2000e-004	0.0290		101.9393	101.9393	5.2300e-003		102.0492
Total	0.0878	0.4014	1.0757	2.2200e-003	0.1333	5.8100e-003	0.1392	0.0359	5.3400e-003	0.0412		195.0408	195.0408	5.9500e-003		195.1658

3.2 Building Construction - 2017

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	1.3059	7.5782	69.6441	0.1072		0.0812	0.0812		0.0812	0.0812	0.0000	10,559.22 13	10,559.22 13	2.5988		10,613.79 61
Total	1.3059	7.5782	69.6441	0.1072		0.0812	0.0812		0.0812	0.0812	0.0000	10,559.22 13	10,559.22 13	2.5988		10,613.79 61

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0441	0.3470	0.5672	9.5000e-004	0.0266	5.0300e-003	0.0316	7.5800e-003	4.6200e-003	0.0122		93.1016	93.1016	7.2000e-004		93.1166
Worker	0.0436	0.0544	0.5085	1.2700e-003	0.1068	7.8000e-004	0.1076	0.0283	7.2000e-004	0.0290		101.9393	101.9393	5.2300e-003		102.0492
Total	0.0878	0.4014	1.0757	2.2200e-003	0.1333	5.8100e-003	0.1392	0.0359	5.3400e-003	0.0412		195.0408	195.0408	5.9500e-003		195.1658

3.2 Building Construction - 2018**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	10.6747	93.0434	70.1306	0.1072		5.9771	5.9771		5.6191	5.6191		10,439.7558	10,439.7558	2.5548		10,493.4068
Total	10.6747	93.0434	70.1306	0.1072		5.9771	5.9771		5.6191	5.6191		10,439.7558	10,439.7558	2.5548		10,493.4068

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0414	0.3133	0.5431	9.4000e-004	0.0266	4.6700e-003	0.0312	7.5700e-003	4.2900e-003	0.0119		91.5011	91.5011	7.0000e-004		91.5159
Worker	0.0397	0.0496	0.4593	1.2700e-003	0.1068	7.6000e-004	0.1076	0.0283	7.0000e-004	0.0290		98.1105	98.1105	4.8700e-003		98.2127
Total	0.0810	0.3629	1.0023	2.2100e-003	0.1333	5.4300e-003	0.1388	0.0359	4.9900e-003	0.0409		189.6116	189.6116	5.5700e-003		189.7286

3.2 Building Construction - 2018

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	1.3059	7.5782	69.6441	0.1072		0.0812	0.0812		0.0812	0.0812	0.0000	10,439.7558	10,439.7558	2.5548		10,493.4068
Total	1.3059	7.5782	69.6441	0.1072		0.0812	0.0812		0.0812	0.0812	0.0000	10,439.7558	10,439.7558	2.5548		10,493.4068

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0414	0.3133	0.5431	9.4000e-004	0.0266	4.6700e-003	0.0312	7.5700e-003	4.2900e-003	0.0119		91.5011	91.5011	7.0000e-004		91.5159
Worker	0.0397	0.0496	0.4593	1.2700e-003	0.1068	7.6000e-004	0.1076	0.0283	7.0000e-004	0.0290		98.1105	98.1105	4.8700e-003		98.2127
Total	0.0810	0.3629	1.0023	2.2100e-003	0.1333	5.4300e-003	0.1388	0.0359	4.9900e-003	0.0409		189.6116	189.6116	5.5700e-003		189.7286

3.3 Paving - 2017**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	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0504	0.0628	0.5868	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		117.6222	117.6222	6.0400e-003		117.7491
Total	0.0504	0.0628	0.5868	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		117.6222	117.6222	6.0400e-003		117.7491

3.3 Paving - 2017**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	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,281.0588	2,281.0588	0.6989		2,295.7360

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0504	0.0628	0.5868	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		117.6222	117.6222	6.0400e-003		117.7491
Total	0.0504	0.0628	0.5868	1.4700e-003	0.1232	9.0000e-004	0.1241	0.0327	8.3000e-004	0.0335		117.6222	117.6222	6.0400e-003		117.7491

3.3 Paving - 2018**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	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0458	0.0573	0.5299	1.4600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		113.2044	113.2044	5.6200e-003		113.3224
Total	0.0458	0.0573	0.5299	1.4600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		113.2044	113.2044	5.6200e-003		113.3224

3.3 Paving - 2018**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	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0458	0.0573	0.5299	1.4600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		113.2044	113.2044	5.6200e-003		113.3224
Total	0.0458	0.0573	0.5299	1.4600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		113.2044	113.2044	5.6200e-003		113.3224

3.4 Architectural Coating - 2017

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	24.6379					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	24.9702	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0101	0.0126	0.1174	2.9000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.7000e-004	6.7000e-003		23.5244	23.5244	1.2100e-003		23.5498
Total	0.0101	0.0126	0.1174	2.9000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.7000e-004	6.7000e-003		23.5244	23.5244	1.2100e-003		23.5498

3.4 Architectural Coating - 2017

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	24.6379					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4481	281.4481	0.0297		282.0721
Total	24.6676	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4481	281.4481	0.0297		282.0721

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0101	0.0126	0.1174	2.9000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.7000e-004	6.7000e-003		23.5244	23.5244	1.2100e-003		23.5498
Total	0.0101	0.0126	0.1174	2.9000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.7000e-004	6.7000e-003		23.5244	23.5244	1.2100e-003		23.5498

3.4 Architectural Coating - 2018

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	24.6379					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	24.9366	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.1500e-003	0.0115	0.1060	2.9000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.6000e-004	6.7000e-003		22.6409	22.6409	1.1200e-003		22.6645
Total	9.1500e-003	0.0115	0.1060	2.9000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.6000e-004	6.7000e-003		22.6409	22.6409	1.1200e-003		22.6645

3.4 Architectural Coating - 2018

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	24.6379					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4485	281.4485	0.0267		282.0102
Total	24.6676	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4485	281.4485	0.0267		282.0102

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.1500e-003	0.0115	0.1060	2.9000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.6000e-004	6.7000e-003		22.6409	22.6409	1.1200e-003		22.6645
Total	9.1500e-003	0.0115	0.1060	2.9000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.6000e-004	6.7000e-003		22.6409	22.6409	1.1200e-003		22.6645

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925
Unmitigated	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264		8.6160	8.6160	8.4000e-003		8.7925
Total	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925

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					
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264		8.6160	8.6160	8.4000e-003		8.7925
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.1462	0.0555	4.8010	2.5000e-004		0.0264	0.0264		0.0264	0.0264	0.0000	8.6160	8.6160	8.4000e-003	0.0000	8.7925

7.0 Water Detail

7.1 Mitigation Measures Water**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

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

Valiano - Vertical Development (Phase 2 - N 2)**San Diego County, Mitigation Report****Construction Mitigation Summary**

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.01	0.94	0.01	0.00	0.99	0.99	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.89	0.92	0.03	0.00	0.99	0.99	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.83	0.95	-0.15	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	Tier 4 Final	1	1	Level 2	15.00
Cranes	Diesel	Tier 4 Final	4	4	Level 2	15.00
Forklifts	Diesel	Tier 4 Final	12	12	Level 2	15.00
Generator Sets	Diesel	Tier 4 Final	4	4	Level 2	15.00
Pavers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Paving Equipment	Diesel	Tier 4 Final	2	2	Level 2	15.00
Rollers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	12	12	Level 2	15.00
Welders	Diesel	Tier 4 Final	4	4	Level 2	15.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					
Air Compressors	5.01000E-003	3.33500E-002	2.97600E-002	5.00000E-005	2.57000E-003	2.57000E-003	0.00000E+000	4.08521E+000	4.08521E+000	4.10000E-004	0.00000E+000	4.09376E+000
Cranes	8.22300E-002	9.77580E-001	3.52660E-001	7.40000E-004	4.33100E-002	3.98400E-002	0.00000E+000	6.84675E+001	6.84675E+001	2.10600E-002	0.00000E+000	6.89097E+001
Forklifts	9.13800E-002	7.94680E-001	5.58010E-001	6.90000E-004	6.51000E-002	5.99000E-002	0.00000E+000	6.35467E+001	6.35467E+001	1.95400E-002	0.00000E+000	6.39571E+001
Generator Sets	8.31800E-002	6.57000E-001	5.65080E-001	9.90000E-004	4.36800E-002	4.36800E-002	0.00000E+000	8.47811E+001	8.47811E+001	6.68000E-003	0.00000E+000	8.49215E+001
Pavers	2.61700E-002	2.92210E-001	2.12300E-001	3.40000E-004	1.43600E-002	1.32100E-002	0.00000E+000	3.13193E+001	3.13193E+001	9.63000E-003	0.00000E+000	3.15216E+001
Paving Equipment	2.03300E-002	2.30440E-001	1.89550E-001	3.00000E-004	1.14600E-002	1.05500E-002	0.00000E+000	2.78127E+001	2.78127E+001	8.55000E-003	0.00000E+000	2.79924E+001
Rollers	2.23600E-002	2.10260E-001	1.48320E-001	2.00000E-004	1.50700E-002	1.38600E-002	0.00000E+000	1.81760E+001	1.81760E+001	5.59000E-003	0.00000E+000	1.82934E+001
Tractors/Loaders/Backhoes	1.19950E-001	1.15939E+000	9.37180E-001	1.22000E-003	8.61100E-002	7.92200E-002	0.00000E+000	1.13215E+002	1.13215E+002	3.48200E-002	0.00000E+000	1.13946E+002
Welders	7.30100E-002	2.58990E-001	2.84970E-001	3.80000E-004	1.86500E-002	1.86500E-002	0.00000E+000	2.82331E+001	2.82331E+001	5.94000E-003	0.00000E+000	2.83579E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					
Air Compressors	4.80000E-004	1.75000E-003	2.93200E-002	5.00000E-005	3.00000E-005	3.00000E-005	0.00000E+000	4.08521E+000	4.08521E+000	4.10000E-004	0.00000E+000	4.09375E+000
Cranes	9.10000E-003	3.35300E-002	3.33770E-001	7.40000E-004	6.10000E-004	6.10000E-004	0.00000E+000	6.84674E+001	6.84674E+001	2.10600E-002	0.00000E+000	6.89096E+001
Forklifts	8.48000E-003	3.12200E-002	5.22710E-001	6.90000E-004	5.70000E-004	5.70000E-004	0.00000E+000	6.35466E+001	6.35466E+001	1.95400E-002	0.00000E+000	6.39570E+001
Generator Sets	9.87000E-003	3.63400E-002	6.08450E-001	9.90000E-004	6.60000E-004	6.60000E-004	0.00000E+000	8.47810E+001	8.47810E+001	6.68000E-003	0.00000E+000	8.49214E+001
Pavers	4.17000E-003	1.53500E-002	2.56950E-001	3.40000E-004	2.80000E-004	2.80000E-004	0.00000E+000	3.13193E+001	3.13193E+001	9.63000E-003	0.00000E+000	3.15216E+001
Paving Equipment	3.71000E-003	1.36800E-002	2.29050E-001	3.00000E-004	2.50000E-004	2.50000E-004	0.00000E+000	2.78127E+001	2.78127E+001	8.55000E-003	0.00000E+000	2.79923E+001
Rollers	2.41000E-003	8.89000E-003	1.48790E-001	2.00000E-004	1.60000E-004	1.60000E-004	0.00000E+000	1.81760E+001	1.81760E+001	5.59000E-003	0.00000E+000	1.82934E+001
Tractors/Loaders/Backhoes	1.49500E-002	5.50800E-002	9.22190E-001	1.22000E-003	1.00000E-003	1.00000E-003	0.00000E+000	1.13215E+002	1.13215E+002	3.48200E-002	0.00000E+000	1.13946E+002
Welders	6.57000E-003	1.28010E-001	2.24530E-001	3.80000E-004	2.20000E-004	2.20000E-004	0.00000E+000	2.82331E+001	2.82331E+001	5.94000E-003	0.00000E+000	2.83579E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	9.04192E-001	9.47526E-001	1.47849E-002	0.00000E+000	9.88327E-001	9.88327E-001	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.44274E-006
Cranes	8.89335E-001	9.65701E-001	5.35643E-002	0.00000E+000	9.85915E-001	9.84689E-001	0.00000E+000	1.16844E-006	1.16844E-006	0.00000E+000	0.00000E+000	1.30606E-006
Forklifts	9.07201E-001	9.60714E-001	6.32605E-002	0.00000E+000	9.91244E-001	9.90484E-001	0.00000E+000	1.25892E-006	1.25892E-006	0.00000E+000	0.00000E+000	1.25084E-006
Generator Sets	8.81342E-001	9.44688E-001	7.67502E-002	0.00000E+000	9.84890E-001	9.84890E-001	0.00000E+000	1.17951E-006	1.17951E-006	0.00000E+000	0.00000E+000	1.17756E-006
Pavers	8.40657E-001	9.47469E-001	2.10316E-001	0.00000E+000	9.80501E-001	9.78804E-001	0.00000E+000	1.27717E-006	1.27717E-006	0.00000E+000	0.00000E+000	9.51728E-007
Paving Equipment	8.17511E-001	9.40635E-001	2.08388E-001	0.00000E+000	9.78185E-001	9.76303E-001	0.00000E+000	1.43819E-006	1.43819E-006	0.00000E+000	0.00000E+000	1.42896E-006
Rollers	8.92218E-001	9.57719E-001	3.16882E-003	0.00000E+000	9.89383E-001	9.88456E-001	0.00000E+000	1.10035E-006	1.10035E-006	0.00000E+000	0.00000E+000	1.09329E-006
Tractors/Loaders/Balckhoes	8.75365E-001	9.52492E-001	1.59948E-002	0.00000E+000	9.88387E-001	9.87377E-001	0.00000E+000	1.14826E-006	1.14826E-006	0.00000E+000	0.00000E+000	1.22865E-006
Welders	9.10012E-001	5.05734E-001	2.12093E-001	0.00000E+000	9.88204E-001	9.88204E-001	0.00000E+000	1.06258E-006	1.06258E-006	0.00000E+000	0.00000E+000	1.05791E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input	Mitigation Input	Mitigation Input			
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	0.00		
Yes	Clean Paved Road	% PM Reduction	0.00				

Phase	Source	Unmitigated		Mitigated		Percent Reduction	
		PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	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
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	-0.01	0.13		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			
No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				

No	Commute	Transit Subsidy			
No	Commute	Implement Employee Parking "Cash Out"			
No	Commute	Workplace Parking Charge			
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00		
No	Commute	Market Commute Trip Reduction Option	0.00		
No	Commute	Employee Vanpool/Shuttle	0.00	2.00	
No	Commute	Provide Ride Sharing Program			
	Commute	Commute Subtotal	0.00		
No	School Trip	Implement School Bus Program	0.00		
		Total VMT Reduction	0.00		

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	250.00
No	Use Low VOC Paint (Residential Exterior)	250.00
No	Use Low VOC Paint (Non-residential Interior)	250.00
No	Use Low VOC Paint (Non-residential Exterior)	250.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy	0.00	0.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
No	Use Water Efficient Irrigation Systems	6.10	

No	Water Efficient Landscape	0.00	0.00
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Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

Valiano - Vertical Development (Phase 3 - N 3)
San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	35.00	Dwelling Unit	11.36	63,000.00	100

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Assuming 2 construction crews for building construction, and paving and architectural coating would be spread out over the course of construction.

Off-road Equipment -

Off-road Equipment - Assuming 2 construction crews.

Off-road Equipment -

Trips and VMT -

Architectural Coating - Rule 67

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, level 2 DPF, and 15% oxidation catalyst.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00

[illegible]

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	122.00
tblConstructionPhase	NumDays	300.00	185.00
tblConstructionPhase	NumDays	20.00	185.00
tblConstructionPhase	PhaseEndDate	3/29/2019	10/10/2018
tblConstructionPhase	PhaseEndDate	6/26/2019	10/10/2018
tblConstructionPhase	PhaseStartDate	10/11/2018	4/24/2018
tblConstructionPhase	PhaseStartDate	10/11/2018	1/25/2018
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	41.80	0.00
tblFireplaces	NumberWood	26.60	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	88.97	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	4,951,705.95	0.00
tblWater	OutdoorWaterUseRate	3,121,727.66	0.00
tblWoodstoves	NumberCatalytic	3.80	0.00
tblWoodstoves	NumberNoncatalytic	3.80	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2018	21.4882	66.4625	53.9362	0.0857	0.4392	4.0897	4.5289	0.1176	3.8347	3.9523	0.0000	8,308.7573	8,308.7573	2.0221	0.0000	8,351.2214
Total	21.4882	66.4625	53.9362	0.0857	0.4392	4.0897	4.5289	0.1176	3.8347	3.9523	0.0000	8,308.7573	8,308.7573	2.0221	0.0000	8,351.2214

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					
2018	15.1980	5.6820	56.1044	0.0857	0.4392	0.0729	0.5121	0.1176	0.0719	0.1895	0.0000	8,308.7573	8,308.7573	2.0221	0.0000	8,351.2214
Total	15.1980	5.6820	56.1044	0.0857	0.4392	0.0729	0.5121	0.1176	0.0719	0.1895	0.0000	8,308.7573	8,308.7573	2.0221	0.0000	8,351.2214

	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
Percent Reduction	29.27	91.45	-4.02	0.00	0.00	98.22	88.69	0.00	98.12	95.21	0.00	0.00	0.00	0.00	0.00	0.00

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	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0882	0.0335	2.8971	1.5000e-004	0.0000	0.0159	0.0159	0.0000	0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058

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	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0882	0.0335	2.8971	1.5000e-004	0.0000	0.0159	0.0159	0.0000	0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/25/2018	10/10/2018	5	185	
2	Paving	Paving	1/25/2018	10/10/2018	5	185	
3	Architectural Coating	Architectural Coating	4/24/2018	10/10/2018	5	122	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 277,020; Residential Outdoor: 92,340; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	2	7.00	226	0.29
Building Construction	Forklifts	6	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	6	7.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	18	27.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Building Construction - 2018**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	5.3374	46.5217	35.0653	0.0536		2.9886	2.9886		2.8096	2.8096		5,219.8779	5,219.8779	1.2774		5,246.7034
Total	5.3374	46.5217	35.0653	0.0536		2.9886	2.9886		2.8096	2.8096		5,219.8779	5,219.8779	1.2774		5,246.7034

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0720	0.6124	0.7960	1.9000e-003	0.0531	9.2400e-003	0.0623	0.0152	8.5000e-003	0.0237		184.4241	184.4241	1.3700e-003		184.4528
Worker	0.0782	0.0919	0.9917	2.8100e-003	0.2218	1.5800e-003	0.2234	0.0588	1.4600e-003	0.0603		216.9980	216.9980	0.0101		217.2103
Total	0.1502	0.7043	1.7877	4.7100e-003	0.2749	0.0108	0.2857	0.0740	9.9600e-003	0.0840		401.4221	401.4221	0.0115		401.6631

3.2 Building Construction - 2018

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	0.6530	3.7891	34.8220	0.0536		0.0406	0.0406		0.0406	0.0406	0.0000	5,219.8779	5,219.8779	1.2774		5,246.7034
Total	0.6530	3.7891	34.8220	0.0536		0.0406	0.0406		0.0406	0.0406	0.0000	5,219.8779	5,219.8779	1.2774		5,246.7034

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0720	0.6124	0.7960	1.9000e-003	0.0531	9.2400e-003	0.0623	0.0152	8.5000e-003	0.0237		184.4241	184.4241	1.3700e-003		184.4528
Worker	0.0782	0.0919	0.9917	2.8100e-003	0.2218	1.5800e-003	0.2234	0.0588	1.4600e-003	0.0603		216.9980	216.9980	0.0101		217.2103
Total	0.1502	0.7043	1.7877	4.7100e-003	0.2749	0.0108	0.2857	0.0740	9.9600e-003	0.0840		401.4221	401.4221	0.0115		401.6631

3.3 Paving - 2018**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	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0435	0.0510	0.5510	1.5600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		120.5544	120.5544	5.6200e-003		120.6724
Total	0.0435	0.0510	0.5510	1.5600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		120.5544	120.5544	5.6200e-003		120.6724

3.3 Paving - 2018**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	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0435	0.0510	0.5510	1.5600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		120.5544	120.5544	5.6200e-003		120.6724
Total	0.0435	0.0510	0.5510	1.5600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		120.5544	120.5544	5.6200e-003		120.6724

3.4 Architectural Coating - 2018

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	14.0327					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	14.3313	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0145	0.0170	0.1837	5.2000e-004	0.0411	2.9000e-004	0.0414	0.0109	2.7000e-004	0.0112		40.1848	40.1848	1.8700e-003		40.2241
Total	0.0145	0.0170	0.1837	5.2000e-004	0.0411	2.9000e-004	0.0414	0.0109	2.7000e-004	0.0112		40.1848	40.1848	1.8700e-003		40.2241

3.4 Architectural Coating - 2018

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	14.0327					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4485	281.4485	0.0267		282.0102
Total	14.0624	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4485	281.4485	0.0267		282.0102

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0145	0.0170	0.1837	5.2000e-004	0.0411	2.9000e-004	0.0414	0.0109	2.7000e-004	0.0112		40.1848	40.1848	1.8700e-003		40.2241
Total	0.0145	0.0170	0.1837	5.2000e-004	0.0411	2.9000e-004	0.0414	0.0109	2.7000e-004	0.0112		40.1848	40.1848	1.8700e-003		40.2241

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058
Unmitigated	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159		5.1993	5.1993	5.0700e-003		5.3058
Total	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159		5.1993	5.1993	5.0700e-003		5.3058
Total	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058

7.0 Water Detail

7.1 Mitigation Measures Water**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

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

Valiano - Vertical Development (Phase 3 - N 3)
San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	35.00	Dwelling Unit	11.36	63,000.00	100

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Assuming 2 construction crews for building construction, and paving and architectural coating would be spread out over the course of construction.

Off-road Equipment -

Off-road Equipment - Assuming 2 construction crews.

Off-road Equipment -

Trips and VMT -

Architectural Coating - Rule 67

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, level 2 DPF, and 15% oxidation catalyst.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00

[illegible]

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	122.00
tblConstructionPhase	NumDays	300.00	185.00
tblConstructionPhase	NumDays	20.00	185.00
tblConstructionPhase	PhaseEndDate	3/29/2019	10/10/2018
tblConstructionPhase	PhaseEndDate	6/26/2019	10/10/2018
tblConstructionPhase	PhaseStartDate	10/11/2018	4/24/2018
tblConstructionPhase	PhaseStartDate	10/11/2018	1/25/2018
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	41.80	0.00
tblFireplaces	NumberWood	26.60	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	88.97	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	4,951,705.95	0.00
tblWater	OutdoorWaterUseRate	3,121,727.66	0.00
tblWoodstoves	NumberCatalytic	3.80	0.00
tblWoodstoves	NumberNoncatalytic	3.80	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2018	21.5062	66.4962	54.1604	0.0854	0.4392	4.0898	4.5290	0.1176	3.8348	3.9524	0.0000	8,284.305 2	8,284.305 2	2.0221	0.0000	8,326.770 2
Total	21.5062	66.4962	54.1604	0.0854	0.4392	4.0898	4.5290	0.1176	3.8348	3.9524	0.0000	8,284.305 2	8,284.305 2	2.0221	0.0000	8,326.770 2

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					
2018	15.2159	5.7157	56.3286	0.0854	0.4392	0.0730	0.5122	0.1176	0.0720	0.1896	0.0000	8,284.3052	8,284.3052	2.0221	0.0000	8,326.7701
Total	15.2159	5.7157	56.3286	0.0854	0.4392	0.0730	0.5122	0.1176	0.0720	0.1896	0.0000	8,284.3052	8,284.3052	2.0221	0.0000	8,326.7701

	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
Percent Reduction	29.25	91.40	-4.00	0.00	0.00	98.22	88.69	0.00	98.12	95.20	0.00	0.00	0.00	0.00	0.00	0.00

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	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0882	0.0335	2.8971	1.5000e-004	0.0000	0.0159	0.0159	0.0000	0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058

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	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0882	0.0335	2.8971	1.5000e-004	0.0000	0.0159	0.0159	0.0000	0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/25/2018	10/10/2018	5	185	
2	Paving	Paving	1/25/2018	10/10/2018	5	185	
3	Architectural Coating	Architectural Coating	4/24/2018	10/10/2018	5	122	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 277,020; Residential Outdoor: 92,340; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	2	7.00	226	0.29
Building Construction	Forklifts	6	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	6	7.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	18	27.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Building Construction - 2018**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	5.3374	46.5217	35.0653	0.0536		2.9886	2.9886		2.8096	2.8096		5,219.8779	5,219.8779	1.2774		5,246.7034
Total	5.3374	46.5217	35.0653	0.0536		2.9886	2.9886		2.8096	2.8096		5,219.8779	5,219.8779	1.2774		5,246.7034

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0827	0.6266	1.0861	1.8900e-003	0.0531	9.3300e-003	0.0624	0.0152	8.5900e-003	0.0237		183.0023	183.0023	1.4100e-003		183.0318
Worker	0.0824	0.1031	0.9538	2.6400e-003	0.2218	1.5800e-003	0.2234	0.0588	1.4600e-003	0.0603		203.7679	203.7679	0.0101		203.9802
Total	0.1651	0.7297	2.0399	4.5300e-003	0.2749	0.0109	0.2858	0.0740	0.0101	0.0840		386.7701	386.7701	0.0115		387.0120

3.2 Building Construction - 2018

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	0.6530	3.7891	34.8220	0.0536		0.0406	0.0406		0.0406	0.0406	0.0000	5,219.8779	5,219.8779	1.2774		5,246.7034
Total	0.6530	3.7891	34.8220	0.0536		0.0406	0.0406		0.0406	0.0406	0.0000	5,219.8779	5,219.8779	1.2774		5,246.7034

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0827	0.6266	1.0861	1.8900e-003	0.0531	9.3300e-003	0.0624	0.0152	8.5900e-003	0.0237		183.0023	183.0023	1.4100e-003		183.0318
Worker	0.0824	0.1031	0.9538	2.6400e-003	0.2218	1.5800e-003	0.2234	0.0588	1.4600e-003	0.0603		203.7679	203.7679	0.0101		203.9802
Total	0.1651	0.7297	2.0399	4.5300e-003	0.2749	0.0109	0.2858	0.0740	0.0101	0.0840		386.7701	386.7701	0.0115		387.0120

3.3 Paving - 2018**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	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0458	0.0573	0.5299	1.4600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		113.2044	113.2044	5.6200e-003		113.3224
Total	0.0458	0.0573	0.5299	1.4600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		113.2044	113.2044	5.6200e-003		113.3224

3.3 Paving - 2018**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	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0458	0.0573	0.5299	1.4600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		113.2044	113.2044	5.6200e-003		113.3224
Total	0.0458	0.0573	0.5299	1.4600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		113.2044	113.2044	5.6200e-003		113.3224

3.4 Architectural Coating - 2018**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	14.0327					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	14.3313	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0153	0.0191	0.1766	4.9000e-004	0.0411	2.9000e-004	0.0414	0.0109	2.7000e-004	0.0112		37.7348	37.7348	1.8700e-003		37.7741
Total	0.0153	0.0191	0.1766	4.9000e-004	0.0411	2.9000e-004	0.0414	0.0109	2.7000e-004	0.0112		37.7348	37.7348	1.8700e-003		37.7741

3.4 Architectural Coating - 2018

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	14.0327					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4485	281.4485	0.0267		282.0102
Total	14.0624	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4485	281.4485	0.0267		282.0102

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0153	0.0191	0.1766	4.9000e-004	0.0411	2.9000e-004	0.0414	0.0109	2.7000e-004	0.0112		37.7348	37.7348	1.8700e-003		37.7741
Total	0.0153	0.0191	0.1766	4.9000e-004	0.0411	2.9000e-004	0.0414	0.0109	2.7000e-004	0.0112		37.7348	37.7348	1.8700e-003		37.7741

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058
Unmitigated	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159		5.1993	5.1993	5.0700e-003		5.3058
Total	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159		5.1993	5.1993	5.0700e-003		5.3058
Total	0.0882	0.0335	2.8971	1.5000e-004		0.0159	0.0159		0.0159	0.0159	0.0000	5.1993	5.1993	5.0700e-003	0.0000	5.3058

7.0 Water Detail

7.1 Mitigation Measures Water**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

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

Valiano - Vertical Development (Phase 3 - N 3)**San Diego County, Mitigation Report****Construction Mitigation Summary**

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.02	0.94	0.01	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.85	0.90	0.01	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.81	0.94	-0.16	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	Tier 4 Final	1	1	Level 2	15.00
Cranes	Diesel	Tier 4 Final	2	2	Level 2	15.00
Forklifts	Diesel	Tier 4 Final	6	6	Level 2	15.00
Generator Sets	Diesel	Tier 4 Final	2	2	Level 2	15.00
Pavers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Paving Equipment	Diesel	Tier 4 Final	2	2	Level 2	15.00
Rollers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	6	6	Level 2	15.00
Welders	Diesel	Tier 4 Final	2	2	Level 2	15.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					
Air Compressors	1.82200E-002	1.22350E-001	1.13110E-001	1.80000E-004	9.18000E-003	9.18000E-003	0.00000E+000	1.55749E+001	1.55749E+001	1.48000E-003	0.00000E+000	1.56060E+001
Cranes	9.03900E-002	1.08022E+000	3.99390E-001	9.10000E-004	4.67500E-002	4.30100E-002	0.00000E+000	8.34156E+001	8.34156E+001	2.59700E-002	0.00000E+000	8.39610E+001
Forklifts	9.88700E-002	8.73850E-001	6.72230E-001	8.50000E-004	6.97400E-002	6.41600E-002	0.00000E+000	7.74301E+001	7.74301E+001	2.41100E-002	0.00000E+000	7.79363E+001
Generator Sets	9.35000E-002	7.60970E-001	6.93230E-001	1.22000E-003	4.84700E-002	4.84700E-002	0.00000E+000	1.04563E+002	1.04563E+002	7.54000E-003	0.00000E+000	1.04722E+002
Pavers	5.80200E-002	6.41890E-001	5.20600E-001	8.40000E-004	3.13600E-002	2.88500E-002	0.00000E+000	7.63514E+001	7.63514E+001	2.37700E-002	0.00000E+000	7.68506E+001
Paving Equipment	4.33200E-002	4.84380E-001	4.62080E-001	7.40000E-004	2.37200E-002	2.18200E-002	0.00000E+000	6.77682E+001	6.77682E+001	2.11000E-002	0.00000E+000	6.82113E+001
Rollers	4.77100E-002	4.61280E-001	3.58060E-001	4.80000E-004	3.17400E-002	2.92000E-002	0.00000E+000	4.42912E+001	4.42912E+001	1.37900E-002	0.00000E+000	4.45808E+001
Tractors/Loaders/Backhoes	1.29230E-001	1.27706E+000	1.13477E+000	1.51000E-003	9.04700E-002	8.32300E-002	0.00000E+000	1.37794E+002	1.37794E+002	4.29000E-002	0.00000E+000	1.38695E+002
Welders	8.17200E-002	3.11160E-001	3.43920E-001	4.70000E-004	2.10100E-002	2.10100E-002	0.00000E+000	3.48208E+001	3.48208E+001	6.68000E-003	0.00000E+000	3.49611E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					
Air Compressors	1.81000E-003	6.68000E-003	1.11780E-001	1.80000E-004	1.20000E-004	1.20000E-004	0.00000E+000	1.55749E+001	1.55749E+001	1.48000E-003	0.00000E+000	1.56059E+001
Cranes	1.12300E-002	4.13500E-002	4.11650E-001	9.10000E-004	7.50000E-004	7.50000E-004	0.00000E+000	8.34155E+001	8.34155E+001	2.59700E-002	0.00000E+000	8.39609E+001
Forklifts	1.04500E-002	3.85100E-002	6.44670E-001	8.50000E-004	7.00000E-004	7.00000E-004	0.00000E+000	7.74300E+001	7.74300E+001	2.41100E-002	0.00000E+000	7.79362E+001
Generator Sets	1.21700E-002	4.48200E-002	7.50430E-001	1.22000E-003	8.10000E-004	8.10000E-004	0.00000E+000	1.04563E+002	1.04563E+002	7.54000E-003	0.00000E+000	1.04722E+002
Pavers	1.02800E-002	3.78600E-002	6.33810E-001	8.40000E-004	6.90000E-004	6.90000E-004	0.00000E+000	7.63514E+001	7.63514E+001	2.37700E-002	0.00000E+000	7.68505E+001
Paving Equipment	9.16000E-003	3.37500E-002	5.64990E-001	7.40000E-004	6.10000E-004	6.10000E-004	0.00000E+000	6.77682E+001	6.77682E+001	2.11000E-002	0.00000E+000	6.82112E+001
Rollers	5.95000E-003	2.19200E-002	3.67000E-001	4.80000E-004	4.00000E-004	4.00000E-004	0.00000E+000	4.42911E+001	4.42911E+001	1.37900E-002	0.00000E+000	4.45807E+001
Tractors/Loaders/Backhoes	1.84400E-002	6.79300E-002	1.13737E+000	1.51000E-003	1.23000E-003	1.23000E-003	0.00000E+000	1.37794E+002	1.37794E+002	4.29000E-002	0.00000E+000	1.38695E+002
Welders	8.10000E-003	1.57880E-001	2.76920E-001	4.70000E-004	2.70000E-004	2.70000E-004	0.00000E+000	3.48208E+001	3.48208E+001	6.68000E-003	0.00000E+000	3.49610E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	9.00659E-001	9.45403E-001	1.17585E-002	0.00000E+000	9.86928E-001	9.86928E-001	0.00000E+000	1.28412E-006	1.28412E-006	0.00000E+000	0.00000E+000	6.40781E-007
Cranes	8.75761E-001	9.61721E-001	-3.06968E-002	0.00000E+000	9.83957E-001	9.82562E-001	0.00000E+000	1.19882E-006	1.19882E-006	0.00000E+000	0.00000E+000	1.19103E-006
Forklifts	8.94306E-001	9.55931E-001	4.09979E-002	0.00000E+000	9.89963E-001	9.89090E-001	0.00000E+000	1.16234E-006	1.16234E-006	0.00000E+000	0.00000E+000	1.28310E-006
Generator Sets	8.69840E-001	9.41101E-001	-8.25123E-002	0.00000E+000	9.83289E-001	9.83289E-001	0.00000E+000	1.24327E-006	1.24327E-006	0.00000E+000	0.00000E+000	1.24138E-006
Pavers	8.22820E-001	9.41018E-001	-2.17461E-001	0.00000E+000	9.77997E-001	9.76083E-001	0.00000E+000	1.17876E-006	1.17876E-006	0.00000E+000	0.00000E+000	1.17110E-006
Paving Equipment	7.88550E-001	9.30323E-001	-2.22710E-001	0.00000E+000	9.74283E-001	9.72044E-001	0.00000E+000	1.18049E-006	1.18049E-006	0.00000E+000	0.00000E+000	1.17283E-006
Rollers	8.75288E-001	9.52480E-001	-2.49679E-002	0.00000E+000	9.87398E-001	9.86301E-001	0.00000E+000	1.35467E-006	1.35467E-006	0.00000E+000	0.00000E+000	1.34587E-006
Tractors/Loaders/Balckhoes	8.57309E-001	9.46808E-001	-2.29121E-003	0.00000E+000	9.86404E-001	9.85222E-001	0.00000E+000	1.16115E-006	1.16115E-006	0.00000E+000	0.00000E+000	1.15361E-006
Welders	9.00881E-001	4.92608E-001	1.94813E-001	0.00000E+000	9.87149E-001	9.87149E-001	0.00000E+000	1.43592E-006	1.43592E-006	0.00000E+000	0.00000E+000	1.14413E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input	Mitigation Input	Mitigation Input			
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	0.00		
Yes	Clean Paved Road	% PM Reduction	0.00				

Phase	Source	Unmitigated		Mitigated		Percent Reduction	
		PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.02	0.01	0.02	0.01	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.01	0.00	0.01	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	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
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	-0.01	0.13		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			
No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				

No	Commute	Transit Subsidy			
No	Commute	Implement Employee Parking "Cash Out"			
No	Commute	Workplace Parking Charge			
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00		
No	Commute	Market Commute Trip Reduction Option	0.00		
No	Commute	Employee Vanpool/Shuttle	0.00	2.00	
No	Commute	Provide Ride Sharing Program			
	Commute	Commute Subtotal	0.00		
No	School Trip	Implement School Bus Program	0.00		
		Total VMT Reduction	0.00		

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	250.00
No	Use Low VOC Paint (Residential Exterior)	250.00
No	Use Low VOC Paint (Non-residential Interior)	250.00
No	Use Low VOC Paint (Non-residential Exterior)	250.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy	0.00	0.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
No	Use Water Efficient Irrigation Systems	6.10	

No	Water Efficient Landscape	0.00	0.00
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Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

Valiano - Vertical Development (Phase 4 - N 4)**San Diego County, Summer****1.0 Project Characteristics**

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	2.50	Acre	2.50	108,900.00	0
Single Family Housing	76.00	Dwelling Unit	24.68	136,800.00	217

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Assuming 3 construction crews for building construction, and paving and architectural coating would be spread out over the course of construction.

Off-road Equipment -

Off-road Equipment - Assuming 3 construction crews.

Off-road Equipment -

Architectural Coating - Rule 67

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, level 2 DPF, and 15% oxidation catalyst.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	ReapplicationRatePercent	10	0

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	35.00	104.00
tblConstructionPhase	NumDays	440.00	167.00
tblConstructionPhase	NumDays	35.00	167.00
tblConstructionPhase	PhaseEndDate	10/24/2019	5/31/2019
tblConstructionPhase	PhaseEndDate	1/21/2020	5/31/2019
tblConstructionPhase	PhaseStartDate	6/1/2019	1/8/2019
tblConstructionPhase	PhaseStartDate	6/1/2019	10/11/2018
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	37.95	0.00
tblFireplaces	NumberWood	24.15	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	9.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	9.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00

tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.21	0.00
tblSolidWaste	SolidWasteGenerationRate	80.77	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	4,495,627.77	0.00
tblWater	OutdoorWaterUseRate	2,978,703.37	0.00
tblWater	OutdoorWaterUseRate	2,834,200.11	0.00
tblWoodstoves	NumberCatalytic	3.45	0.00
tblWoodstoves	NumberNoncatalytic	3.45	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2018	10.0916	89.1517	72.7386	0.1176	0.8724	5.4554	6.3278	0.2347	5.1091	5.3438	0.0000	11,342.5904	11,342.5904	2.6516	0.0000	11,398.2734
2019	48.4391	81.7225	73.3185	0.1220	0.9874	4.8260	5.8134	0.2652	4.5284	4.7936	0.0000	11,573.7576	11,573.7576	2.6458	0.0000	11,629.3192
Total	58.5307	170.8742	146.0571	0.2396	1.8598	10.2814	12.1411	0.4999	9.6375	10.1374	0.0000	22,916.3480	22,916.3480	5.2974	0.0000	23,027.5926

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					
2018	1.7280	8.9012	74.8069	0.1176	0.8724	0.1131	0.9855	0.2347	0.1104	0.3452	0.0000	11,342.5904	11,342.5904	2.6516	0.0000	11,398.2734
2019	40.9757	8.8609	76.7441	0.1220	0.9874	0.1139	1.1012	0.2652	0.1113	0.3765	0.0000	11,573.7576	11,573.7576	2.6458	0.0000	11,629.3192
Total	42.7037	17.7621	151.5509	0.2396	1.8598	0.2270	2.0868	0.4999	0.2217	0.7217	0.0000	22,916.3480	22,916.3480	5.2974	0.0000	23,027.5925

	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
Percent Reduction	27.04	89.61	-3.76	0.00	0.00	97.79	82.81	0.00	97.70	92.88	0.00	0.00	0.00	0.00	0.00	0.00

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	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1916	0.0728	6.2912	3.3000e-004	0.0000	0.0346	0.0346	0.0000	0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

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	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1916	0.0728	6.2912	3.3000e-004	0.0000	0.0346	0.0346	0.0000	0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	10/11/2018	5/31/2019	5	167	
2	Paving	Paving	10/11/2018	5/31/2019	5	167	
3	Architectural Coating	Architectural Coating	1/8/2019	5/31/2019	5	104	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 251,505; Residential Outdoor: 83,835; Non-Residential Indoor: 163,350; Non-Residential Outdoor: 54,450 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	3	7.00	226	0.29
Building Construction	Forklifts	9	8.00	89	0.20
Building Construction	Generator Sets	3	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	9	7.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	27	71.00	25.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Building Construction - 2018**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	8.0061	69.7825	52.5980	0.0804		4.4828	4.4828		4.2143	4.2143		7,829.8168	7,829.8168	1.9161		7,870.0551
Total	8.0061	69.7825	52.5980	0.0804		4.4828	4.4828		4.2143	4.2143		7,829.8168	7,829.8168	1.9161		7,870.0551

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2250	1.9138	2.4874	5.9300e-003	0.1659	0.0289	0.1948	0.0473	0.0266	0.0739		576.3253	576.3253	4.2700e-003		576.4150
Worker	0.2056	0.2416	2.6078	7.3900e-003	0.5833	4.1600e-003	0.5874	0.1547	3.8500e-003	0.1586		570.6244	570.6244	0.0266		571.1827
Total	0.4307	2.1554	5.0953	0.0133	0.7492	0.0330	0.7822	0.2020	0.0304	0.2325		1,146.9497	1,146.9497	0.0309		1,147.5977

3.2 Building Construction - 2018

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	0.9794	5.6837	52.2331	0.0804		0.0609	0.0609		0.0609	0.0609	0.0000	7,829.8168	7,829.8168	1.9161		7,870.0551
Total	0.9794	5.6837	52.2331	0.0804		0.0609	0.0609		0.0609	0.0609	0.0000	7,829.8168	7,829.8168	1.9161		7,870.0551

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2250	1.9138	2.4874	5.9300e-003	0.1659	0.0289	0.1948	0.0473	0.0266	0.0739		576.3253	576.3253	4.2700e-003		576.4150
Worker	0.2056	0.2416	2.6078	7.3900e-003	0.5833	4.1600e-003	0.5874	0.1547	3.8500e-003	0.1586		570.6244	570.6244	0.0266		571.1827
Total	0.4307	2.1554	5.0953	0.0133	0.7492	0.0330	0.7822	0.2020	0.0304	0.2325		1,146.9497	1,146.9497	0.0309		1,147.5977

3.2 Building Construction - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	7.0549	62.8951	51.3610	0.0804		3.8551	3.8551		3.6248	3.6248		7,742.2853	7,742.2853	1.8837		7,781.8437
Total	7.0549	62.8951	51.3610	0.0804		3.8551	3.8551		3.6248	3.6248		7,742.2853	7,742.2853	1.8837		7,781.8437

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2107	1.7423	2.3636	5.9200e-003	0.1659	0.0269	0.1928	0.0473	0.0247	0.0720		566.3987	566.3987	4.1600e-003		566.4861
Worker	0.1911	0.2232	2.4051	7.3900e-003	0.5833	4.1300e-003	0.5874	0.1547	3.8300e-003	0.1585		550.0032	550.0032	0.0250		550.5284
Total	0.4018	1.9655	4.7686	0.0133	0.7492	0.0310	0.7801	0.2020	0.0285	0.2306		1,116.4019	1,116.4019	0.0292		1,117.0145

3.2 Building Construction - 2019

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	0.9794	5.6837	52.2331	0.0804		0.0609	0.0609		0.0609	0.0609	0.0000	7,742.2853	7,742.2853	1.8837		7,781.8437
Total	0.9794	5.6837	52.2331	0.0804		0.0609	0.0609		0.0609	0.0609	0.0000	7,742.2853	7,742.2853	1.8837		7,781.8437

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2107	1.7423	2.3636	5.9200e-003	0.1659	0.0269	0.1928	0.0473	0.0247	0.0720		566.3987	566.3987	4.1600e-003		566.4861
Worker	0.1911	0.2232	2.4051	7.3900e-003	0.5833	4.1300e-003	0.5874	0.1547	3.8300e-003	0.1585		550.0032	550.0032	0.0250		550.5284
Total	0.4018	1.9655	4.7686	0.0133	0.7492	0.0310	0.7801	0.2020	0.0285	0.2306		1,116.4019	1,116.4019	0.0292		1,117.0145

3.3 Paving - 2018**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	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0435	0.0510	0.5510	1.5600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		120.5544	120.5544	5.6200e-003		120.6724
Total	0.0435	0.0510	0.5510	1.5600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		120.5544	120.5544	5.6200e-003		120.6724

3.3 Paving - 2018**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	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0435	0.0510	0.5510	1.5600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		120.5544	120.5544	5.6200e-003		120.6724
Total	0.0435	0.0510	0.5510	1.5600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		120.5544	120.5544	5.6200e-003		120.6724

3.3 Paving - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4259	14.9353	14.3652	0.0223		0.8094	0.8094		0.7447	0.7447		2,208.973 1	2,208.973 1	0.6989		2,223.649 9
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.4259	14.9353	14.3652	0.0223		0.8094	0.8094		0.7447	0.7447		2,208.973 1	2,208.973 1	0.6989		2,223.649 9

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0404	0.0472	0.5081	1.5600e-003	0.1232	8.7000e-004	0.1241	0.0327	8.1000e-004	0.0335		116.1979	116.1979	5.2800e-003		116.3088
Total	0.0404	0.0472	0.5081	1.5600e-003	0.1232	8.7000e-004	0.1241	0.0327	8.1000e-004	0.0335		116.1979	116.1979	5.2800e-003		116.3088

3.3 Paving - 2019**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	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,208.973 1	2,208.973 1	0.6989		2,223.649 9
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,208.973 1	2,208.973 1	0.6989		2,223.649 9

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0404	0.0472	0.5081	1.5600e-003	0.1232	8.7000e-004	0.1241	0.0327	8.1000e-004	0.0335		116.1979	116.1979	5.2800e-003		116.3088
Total	0.0404	0.0472	0.5081	1.5600e-003	0.1232	8.7000e-004	0.1241	0.0327	8.1000e-004	0.0335		116.1979	116.1979	5.2800e-003		116.3088

3.4 Architectural Coating - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	39.2121					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		281.9473
Total	39.4785	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		281.9473

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0377	0.0440	0.4742	1.4600e-003	0.1150	8.1000e-004	0.1158	0.0305	7.6000e-004	0.0313		108.4513	108.4513	4.9300e-003		108.5549
Total	0.0377	0.0440	0.4742	1.4600e-003	0.1150	8.1000e-004	0.1158	0.0305	7.6000e-004	0.0313		108.4513	108.4513	4.9300e-003		108.5549

3.4 Architectural Coating - 2019

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	39.2121					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4481	281.4481	0.0238		281.9473
Total	39.2418	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4481	281.4481	0.0238		281.9473

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0377	0.0440	0.4742	1.4600e-003	0.1150	8.1000e-004	0.1158	0.0305	7.6000e-004	0.0313		108.4513	108.4513	4.9300e-003		108.5549
Total	0.0377	0.0440	0.4742	1.4600e-003	0.1150	8.1000e-004	0.1158	0.0305	7.6000e-004	0.0313		108.4513	108.4513	4.9300e-003		108.5549

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217
Unmitigated	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346		11.2905	11.2905	0.0110		11.5217
Total	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346		11.2905	11.2905	0.0110		11.5217
Total	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

7.0 Water Detail

7.1 Mitigation Measures Water**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

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

Valiano - Vertical Development (Phase 4 - N 4)**San Diego County, Winter****1.0 Project Characteristics**

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	2.50	Acre	2.50	108,900.00	0
Single Family Housing	76.00	Dwelling Unit	24.68	136,800.00	217

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Assuming 3 construction crews for building construction, and paving and architectural coating would be spread out over the course of construction.

Off-road Equipment -

Off-road Equipment - Assuming 3 construction crews.

Off-road Equipment -

Architectural Coating - Rule 67

Vehicle Trips - Construction only.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

Construction Off-road Equipment Mitigation - Tier 4 Engines, level 2 DPF, and 15% oxidation catalyst.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	ReapplicationRatePercent	10	0

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	35.00	104.00
tblConstructionPhase	NumDays	440.00	167.00
tblConstructionPhase	NumDays	35.00	167.00
tblConstructionPhase	PhaseEndDate	10/24/2019	5/31/2019
tblConstructionPhase	PhaseEndDate	1/21/2020	5/31/2019
tblConstructionPhase	PhaseStartDate	6/1/2019	1/8/2019
tblConstructionPhase	PhaseStartDate	6/1/2019	10/11/2018
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	37.95	0.00
tblFireplaces	NumberWood	24.15	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	9.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	9.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00

tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.21	0.00
tblSolidWaste	SolidWasteGenerationRate	80.77	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	4,495,627.77	0.00
tblWater	OutdoorWaterUseRate	2,978,703.37	0.00
tblWater	OutdoorWaterUseRate	2,834,200.11	0.00
tblWoodstoves	NumberCatalytic	3.45	0.00
tblWoodstoves	NumberNoncatalytic	3.45	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

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					
2018	10.1383	89.2318	73.5246	0.1170	0.8724	5.4557	6.3281	0.2347	5.1094	5.3441	0.0000	11,296.0068	11,296.0068	2.6517	0.0000	11,351.6923
2019	48.4834	81.8003	74.0585	0.1213	0.9874	4.8263	5.8136	0.2652	4.5286	4.7938	0.0000	11,522.1170	11,522.1170	2.6459	0.0000	11,577.6812
Total	58.6216	171.0321	147.5831	0.2384	1.8598	10.2819	12.1417	0.4999	9.6380	10.1379	0.0000	22,818.1238	22,818.1238	5.2976	0.0000	22,929.3735

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					
2018	1.7748	8.9812	75.5929	0.1170	0.8724	0.1134	0.9858	0.2347	0.1107	0.3454	0.0000	11,296.0068	11,296.0068	2.6517	0.0000	11,351.6923
2019	41.0199	8.9387	77.4840	0.1213	0.9874	0.1141	1.1015	0.2652	0.1115	0.3768	0.0000	11,522.1170	11,522.1170	2.6459	0.0000	11,577.6812
Total	42.7946	17.9200	153.0769	0.2384	1.8598	0.2276	2.0873	0.4999	0.2222	0.7222	0.0000	22,818.1238	22,818.1238	5.2976	0.0000	22,929.3735

	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
Percent Reduction	27.00	89.52	-3.72	0.00	0.00	97.79	82.81	0.00	97.69	92.88	0.00	0.00	0.00	0.00	0.00	0.00

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	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1916	0.0728	6.2912	3.3000e-004	0.0000	0.0346	0.0346	0.0000	0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

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	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1916	0.0728	6.2912	3.3000e-004	0.0000	0.0346	0.0346	0.0000	0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	10/11/2018	5/31/2019	5	167	
2	Paving	Paving	10/11/2018	5/31/2019	5	167	
3	Architectural Coating	Architectural Coating	1/8/2019	5/31/2019	5	104	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 251,505; Residential Outdoor: 83,835; Non-Residential Indoor: 163,350; Non-Residential Outdoor: 54,450 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	3	7.00	226	0.29
Building Construction	Forklifts	9	8.00	89	0.20
Building Construction	Generator Sets	3	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	9	7.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	27	71.00	25.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Building Construction - 2018

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	8.0061	69.7825	52.5980	0.0804		4.4828	4.4828		4.2143	4.2143		7,829.8168	7,829.8168	1.9161		7,870.0551
Total	8.0061	69.7825	52.5980	0.0804		4.4828	4.4828		4.2143	4.2143		7,829.8168	7,829.8168	1.9161		7,870.0551

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2585	1.9582	3.3941	5.9000e-003	0.1659	0.0292	0.1951	0.0473	0.0268	0.0742		571.8821	571.8821	4.3900e-003		571.9743
Worker	0.2166	0.2710	2.5082	6.9300e-003	0.5833	4.1600e-003	0.5874	0.1547	3.8500e-003	0.1586		535.8341	535.8341	0.0266		536.3925
Total	0.4751	2.2292	5.9023	0.0128	0.7492	0.0333	0.7825	0.2020	0.0307	0.2327		1,107.7161	1,107.7161	0.0310		1,108.3667

3.2 Building Construction - 2018

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	0.9794	5.6837	52.2331	0.0804		0.0609	0.0609		0.0609	0.0609	0.0000	7,829.8168	7,829.8168	1.9161		7,870.0551
Total	0.9794	5.6837	52.2331	0.0804		0.0609	0.0609		0.0609	0.0609	0.0000	7,829.8168	7,829.8168	1.9161		7,870.0551

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2585	1.9582	3.3941	5.9000e-003	0.1659	0.0292	0.1951	0.0473	0.0268	0.0742		571.8821	571.8821	4.3900e-003		571.9743
Worker	0.2166	0.2710	2.5082	6.9300e-003	0.5833	4.1600e-003	0.5874	0.1547	3.8500e-003	0.1586		535.8341	535.8341	0.0266		536.3925
Total	0.4751	2.2292	5.9023	0.0128	0.7492	0.0333	0.7825	0.2020	0.0307	0.2327		1,107.7161	1,107.7161	0.0310		1,108.3667

3.2 Building Construction - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	7.0549	62.8951	51.3610	0.0804		3.8551	3.8551		3.6248	3.6248		7,742.2853	7,742.2853	1.8837		7,781.8437
Total	7.0549	62.8951	51.3610	0.0804		3.8551	3.8551		3.6248	3.6248		7,742.2853	7,742.2853	1.8837		7,781.8437

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2410	1.7818	3.2452	5.8900e-003	0.1659	0.0271	0.1930	0.0473	0.0249	0.0723		562.0225	562.0225	4.2900e-003		562.1125
Worker	0.2010	0.2504	2.3045	6.9300e-003	0.5833	4.1300e-003	0.5874	0.1547	3.8300e-003	0.1585		516.4455	516.4455	0.0250		516.9707
Total	0.4420	2.0323	5.5497	0.0128	0.7492	0.0312	0.7804	0.2020	0.0288	0.2308		1,078.4680	1,078.4680	0.0293		1,079.0833

3.2 Building Construction - 2019

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	0.9794	5.6837	52.2331	0.0804		0.0609	0.0609		0.0609	0.0609	0.0000	7,742.2853	7,742.2853	1.8837		7,781.8437
Total	0.9794	5.6837	52.2331	0.0804		0.0609	0.0609		0.0609	0.0609	0.0000	7,742.2853	7,742.2853	1.8837		7,781.8437

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2410	1.7818	3.2452	5.8900e-003	0.1659	0.0271	0.1930	0.0473	0.0249	0.0723		562.0225	562.0225	4.2900e-003		562.1125
Worker	0.2010	0.2504	2.3045	6.9300e-003	0.5833	4.1300e-003	0.5874	0.1547	3.8300e-003	0.1585		516.4455	516.4455	0.0250		516.9707
Total	0.4420	2.0323	5.5497	0.0128	0.7492	0.0312	0.7804	0.2020	0.0288	0.2308		1,078.4680	1,078.4680	0.0293		1,079.0833

3.3 Paving - 2018**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	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0458	0.0573	0.5299	1.4600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		113.2044	113.2044	5.6200e-003		113.3224
Total	0.0458	0.0573	0.5299	1.4600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		113.2044	113.2044	5.6200e-003		113.3224

3.3 Paving - 2018**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	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0458	0.0573	0.5299	1.4600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		113.2044	113.2044	5.6200e-003		113.3224
Total	0.0458	0.0573	0.5299	1.4600e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		113.2044	113.2044	5.6200e-003		113.3224

3.3 Paving - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4259	14.9353	14.3652	0.0223		0.8094	0.8094		0.7447	0.7447		2,208.973 1	2,208.973 1	0.6989		2,223.649 9
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.4259	14.9353	14.3652	0.0223		0.8094	0.8094		0.7447	0.7447		2,208.973 1	2,208.973 1	0.6989		2,223.649 9

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0425	0.0529	0.4869	1.4600e-003	0.1232	8.7000e-004	0.1241	0.0327	8.1000e-004	0.0335		109.1082	109.1082	5.2800e-003		109.2192
Total	0.0425	0.0529	0.4869	1.4600e-003	0.1232	8.7000e-004	0.1241	0.0327	8.1000e-004	0.0335		109.1082	109.1082	5.2800e-003		109.2192

3.3 Paving - 2019**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	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,208.973 1	2,208.973 1	0.6989		2,223.649 9
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2745	1.0111	16.9276	0.0223		0.0183	0.0183		0.0183	0.0183	0.0000	2,208.973 1	2,208.973 1	0.6989		2,223.649 9

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0425	0.0529	0.4869	1.4600e-003	0.1232	8.7000e-004	0.1241	0.0327	8.1000e-004	0.0335		109.1082	109.1082	5.2800e-003		109.2192
Total	0.0425	0.0529	0.4869	1.4600e-003	0.1232	8.7000e-004	0.1241	0.0327	8.1000e-004	0.0335		109.1082	109.1082	5.2800e-003		109.2192

3.4 Architectural Coating - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	39.2121					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		281.9473
Total	39.4785	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		281.9473

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0396	0.0494	0.4544	1.3700e-003	0.1150	8.1000e-004	0.1158	0.0305	7.6000e-004	0.0313		101.8343	101.8343	4.9300e-003		101.9379
Total	0.0396	0.0494	0.4544	1.3700e-003	0.1150	8.1000e-004	0.1158	0.0305	7.6000e-004	0.0313		101.8343	101.8343	4.9300e-003		101.9379

3.4 Architectural Coating - 2019

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	39.2121					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4481	281.4481	0.0238		281.9473
Total	39.2418	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4481	281.4481	0.0238		281.9473

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0396	0.0494	0.4544	1.3700e-003	0.1150	8.1000e-004	0.1158	0.0305	7.6000e-004	0.0313		101.8343	101.8343	4.9300e-003		101.9379
Total	0.0396	0.0494	0.4544	1.3700e-003	0.1150	8.1000e-004	0.1158	0.0305	7.6000e-004	0.0313		101.8343	101.8343	4.9300e-003		101.9379

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217
Unmitigated	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346		11.2905	11.2905	0.0110		11.5217
Total	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346		11.2905	11.2905	0.0110		11.5217
Total	0.1916	0.0728	6.2912	3.3000e-004		0.0346	0.0346		0.0346	0.0346	0.0000	11.2905	11.2905	0.0110	0.0000	11.5217

7.0 Water Detail

7.1 Mitigation Measures Water**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

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

Valiano - Vertical Development (Phase 4 - N 4)**San Diego County, Mitigation Report****Construction Mitigation Summary**

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.01	0.92	0.00	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.82	0.88	-0.01	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.79	0.93	-0.17	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	Tier 4 Final	1	1	Level 2	15.00
Cranes	Diesel	Tier 4 Final	3	3	Level 2	15.00
Forklifts	Diesel	Tier 4 Final	9	9	Level 2	15.00
Generator Sets	Diesel	Tier 4 Final	3	3	Level 2	15.00
Pavers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Paving Equipment	Diesel	Tier 4 Final	2	2	Level 2	15.00
Rollers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	9	9	Level 2	15.00
Welders	Diesel	Tier 4 Final	3	3	Level 2	15.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					
Air Compressors	1.38600E-002	9.54400E-002	9.57500E-002	1.50000E-004	6.70000E-003	6.70000E-003	0.00000E+000	1.32769E+001	1.32769E+001	1.12000E-003	0.00000E+000	1.33005E+001
Cranes	1.13050E-001	1.34877E+000	5.08770E-001	1.24000E-003	5.76300E-002	5.30200E-002	0.00000E+000	1.11757E+002	1.11757E+002	3.51600E-002	0.00000E+000	1.12496E+002
Forklifts	1.24950E-001	1.11153E+000	9.01880E-001	1.15000E-003	8.70700E-002	8.01000E-002	0.00000E+000	1.03747E+002	1.03747E+002	3.26400E-002	0.00000E+000	1.04432E+002
Generator Sets	1.16570E-001	9.75550E-001	9.34730E-001	1.65000E-003	5.97200E-002	5.97200E-002	0.00000E+000	1.41584E+002	1.41584E+002	9.40000E-003	0.00000E+000	1.41782E+002
Pavers	4.83500E-002	5.28720E-001	4.67330E-001	7.60000E-004	2.58700E-002	2.38000E-002	0.00000E+000	6.81968E+001	6.81968E+001	2.14600E-002	0.00000E+000	6.86473E+001
Paving Equipment	3.64400E-002	3.94090E-001	4.15760E-001	6.70000E-004	1.94500E-002	1.79000E-002	0.00000E+000	6.05235E+001	6.05235E+001	1.90400E-002	0.00000E+000	6.09233E+001
Rollers	3.96500E-002	3.88880E-001	3.20150E-001	4.40000E-004	2.60100E-002	2.39300E-002	0.00000E+000	3.95642E+001	3.95642E+001	1.24500E-002	0.00000E+000	3.98256E+001
Tractors/Loaders/Backhoes	1.60690E-001	1.60373E+000	1.52193E+000	2.04000E-003	1.09520E-001	1.00760E-001	0.00000E+000	1.84543E+002	1.84543E+002	5.80600E-002	0.00000E+000	1.85762E+002
Welders	1.01410E-001	4.11900E-001	4.57210E-001	6.40000E-004	2.61700E-002	2.61700E-002	0.00000E+000	4.71493E+001	4.71493E+001	8.29000E-003	0.00000E+000	4.73233E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					
Air Compressors	1.55000E-003	5.69000E-003	9.52900E-002	1.50000E-004	1.00000E-004	1.00000E-004	0.00000E+000	1.32769E+001	1.32769E+001	1.12000E-003	0.00000E+000	1.33005E+001
Cranes	1.52000E-002	5.59900E-002	5.57400E-001	1.24000E-003	1.01000E-003	1.01000E-003	0.00000E+000	1.11757E+002	1.11757E+002	3.51600E-002	0.00000E+000	1.12496E+002
Forklifts	1.41600E-002	5.21400E-002	8.72920E-001	1.15000E-003	9.40000E-004	9.40000E-004	0.00000E+000	1.03747E+002	1.03747E+002	3.26400E-002	0.00000E+000	1.04432E+002
Generator Sets	1.64800E-002	6.06900E-002	1.01612E+000	1.65000E-003	1.10000E-003	1.10000E-003	0.00000E+000	1.41584E+002	1.41584E+002	9.40000E-003	0.00000E+000	1.41782E+002
Pavers	9.28000E-003	3.41700E-002	5.72140E-001	7.60000E-004	6.20000E-004	6.20000E-004	0.00000E+000	6.81967E+001	6.81967E+001	2.14600E-002	0.00000E+000	6.86472E+001
Paving Equipment	8.27000E-003	3.04600E-002	5.10020E-001	6.70000E-004	5.50000E-004	5.50000E-004	0.00000E+000	6.05234E+001	6.05234E+001	1.90400E-002	0.00000E+000	6.09233E+001
Rollers	5.37000E-003	1.97900E-002	3.31300E-001	4.40000E-004	3.60000E-004	3.60000E-004	0.00000E+000	3.95642E+001	3.95642E+001	1.24500E-002	0.00000E+000	3.98256E+001
Tractors/Loaders/Backhoes	2.49700E-002	9.19900E-002	1.54005E+000	2.04000E-003	1.66000E-003	1.66000E-003	0.00000E+000	1.84542E+002	1.84542E+002	5.80600E-002	0.00000E+000	1.85762E+002
Welders	1.09700E-002	2.13770E-001	3.74960E-001	6.40000E-004	3.70000E-004	3.70000E-004	0.00000E+000	4.71492E+001	4.71492E+001	8.29000E-003	0.00000E+000	4.73232E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	8.88167E-001	9.40381E-001	4.80418E-003	0.00000E+000	9.85075E-001	9.85075E-001	0.00000E+000	1.50637E-006	1.50637E-006	0.00000E+000	0.00000E+000	1.50371E-006
Cranes	8.65546E-001	9.58488E-001	-9.55835E-002	0.00000E+000	9.82474E-001	9.80951E-001	0.00000E+000	1.16323E-006	1.16323E-006	0.00000E+000	0.00000E+000	1.15560E-006
Forklifts	8.86675E-001	9.53092E-001	3.21107E-002	0.00000E+000	9.89204E-001	9.88265E-001	0.00000E+000	1.15666E-006	1.15666E-006	0.00000E+000	0.00000E+000	1.14907E-006
Generator Sets	8.58626E-001	9.37789E-001	-8.70733E-002	0.00000E+000	9.81581E-001	9.81581E-001	0.00000E+000	1.20070E-006	1.20070E-006	0.00000E+000	0.00000E+000	1.19902E-006
Pavers	8.08066E-001	9.35372E-001	-2.24274E-001	0.00000E+000	9.76034E-001	9.73950E-001	0.00000E+000	1.17308E-006	1.17308E-006	0.00000E+000	0.00000E+000	1.16538E-006
Paving Equipment	7.73052E-001	9.22708E-001	-2.26717E-001	0.00000E+000	9.71722E-001	9.69274E-001	0.00000E+000	1.15658E-006	1.15658E-006	0.00000E+000	0.00000E+000	1.14899E-006
Rollers	8.64565E-001	9.49110E-001	-3.48274E-002	0.00000E+000	9.86159E-001	9.84956E-001	0.00000E+000	1.26377E-006	1.26377E-006	0.00000E+000	0.00000E+000	1.25547E-006
Tractors/Loaders/Balckhoes	8.44608E-001	9.42640E-001	-1.19059E-002	0.00000E+000	9.84843E-001	9.83525E-001	0.00000E+000	1.19214E-006	1.19214E-006	0.00000E+000	0.00000E+000	1.18431E-006
Welders	8.91825E-001	4.81015E-001	1.79895E-001	0.00000E+000	9.85862E-001	9.85862E-001	0.00000E+000	1.27255E-006	1.27255E-006	0.00000E+000	0.00000E+000	1.26788E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input	Mitigation Input	Mitigation Input			
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	0.00		
Yes	Clean Paved Road	% PM Reduction	0.00				

Phase	Source	Unmitigated		Mitigated		Percent Reduction	
		PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.06	0.02	0.06	0.02	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.01	0.00	0.01	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	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
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.20	0.49		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			
No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				

No	Commute	Transit Subsidy			
No	Commute	Implement Employee Parking "Cash Out"			
No	Commute	Workplace Parking Charge			
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00		
No	Commute	Market Commute Trip Reduction Option	0.00		
No	Commute	Employee Vanpool/Shuttle	0.00	2.00	
No	Commute	Provide Ride Sharing Program			
	Commute	Commute Subtotal	0.00		
No	School Trip	Implement School Bus Program	0.00		
		Total VMT Reduction	0.00		

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	250.00
No	Use Low VOC Paint (Residential Exterior)	250.00
No	Use Low VOC Paint (Non-residential Interior)	250.00
No	Use Low VOC Paint (Non-residential Exterior)	250.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy	0.00	0.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
No	Use Water Efficient Irrigation Systems	6.10	

No	Water Efficient Landscape	0.00	0.00
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Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	



Appendix B

ROADWAY CONSTRUCTION EMISSION DATA



Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Valiano Project				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	3.6	15.3	34.9	8.6	1.6	7.0	2.9	1.4	1.5	3,212.1
Grading/Excavation	3.5	17.6	44.1	8.8	1.8	7.0	3.0	1.5	1.5	5,501.6
Drainage/Utilities/Sub-Grade	3.4	15.7	34.3	8.8	1.8	7.0	3.0	1.6	1.5	3,431.0
Paving	1.3	9.0	11.3	0.7	0.7	-	0.6	0.6	-	1,632.0
Maximum (pounds/day)	3.6	17.6	44.1	8.8	1.8	7.0	3.0	1.6	1.5	5,501.6
Total (tons/construction project)	0.1	0.5	1.2	0.2	0.1	0.2	0.1	0.0	0.0	134.3
Notes:										
Project Start Year ->	2016									
Project Length (months) ->	3									
Total Project Area (acres) ->	3									
Maximum Area Disturbed/Day (acres) ->	1									
Total Soil Imported/Exported (yd³/day)->	310									
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.										
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.										

Emission Estimates for -> Valiano Project				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	
Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	1.6	7.0	15.9	3.9	0.7	3.2	1.3	0.7	0.7	1,460.1
Grading/Excavation	1.6	8.0	20.0	4.0	0.8	3.2	1.4	0.7	0.7	2,500.7
Drainage/Utilities/Sub-Grade	1.5	7.1	15.6	4.0	0.8	3.2	1.4	0.7	0.7	1,559.5
Paving	0.6	4.1	5.1	0.3	0.3	-	0.3	0.3	-	741.8
Maximum (kilograms/day)	1.6	8.0	20.0	4.0	0.8	3.2	1.4	0.7	0.7	2,500.7
Total (megagrams/construction project)	0.1	0.5	1.1	0.2	0.0	0.2	0.1	0.0	0.0	121.9
Notes:										
Project Start Year ->	2016									
Project Length (months) ->	3									
Total Project Area (hectares) ->	1									
Maximum Area Disturbed/Day (hectares) ->	0									
Total Soil Imported/Exported (meters³/day)->	237									
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.										
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.										

Road Construction Emissions Model

Version 7.1.5.1

Data Entry Worksheet

Note: Required data input sections have a yellow background.

Optional data input sections have a blue background. Only areas with a

yellow or blue background can be modified. Program defaults have a white background.

The user is required to enter information in cells C10 through C25.



Input Type

Project Name	Valiano Project	
Construction Start Year	2016	Enter a Year between 2009 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	3.00	months
Predominant Soil/Site Type: Enter 1, 2, or 3	2	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	0.98	miles
Total Project Area	2.80	acres
Maximum Area Disturbed/Day	0.70	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.00	yd ³ /day
Soil Exported	310.00	yd ³ /day
Average Truck Capacity	20	yd ³ (assume 20 if unknown)

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months
Grubbing/Land Clearing		0.30
Grading/Excavation		1.35
Drainage/Utilities/Sub-Grade		0.90
Paving		0.45
Totals	0.00	3.00

2005	%	2006	%	2007	%
0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions						
User Input		User Override of Soil Hauling Defaults		Default Values		
Miles/round trip				30		
Round trips/day				16		
Vehicle miles traveled/day (calculated)						465
Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.16	8.45	0.72	0.17	0.10	1720.56
Tons per construction period	0.00	0.13	0.01	0.00	0.00	25.55

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions						
		User Override of Worker Commute Default Values		Default Values		
Miles/ one-way trip				20		
One-way trips/day				2		
No. of employees: Grubbing/Land Clearing				5		
No. of employees: Grading/Excavation				18		
No. of employees: Drainage/Utilities/Sub-Grade				15		
No. of employees: Paving				11		
	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Grading/Excavation (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Paving (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Grubbing/Land Clearing (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Grading/Excavation (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Paving (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Pounds per day - Grubbing/Land Clearing	0.076	0.093	0.861	0.021	0.009	197.546
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.003	0.000	0.000	0.652
Pounds per day - Grading/Excavation	0.266	0.324	3.013	0.073	0.031	691.411
Tons per const. Period - Grading/Excavation	0.004	0.005	0.045	0.001	0.000	10.267
Pounds per day - Drainage/Utilities/Sub-Grade	0.228	0.278	2.582	0.062	0.026	592.638
Tons per const. Period - Drain/Util/Sub-Grade	0.002	0.003	0.026	0.001	0.000	5.867
Pounds per day - Paving	0.171	0.208	1.937	0.047	0.020	444.479
Tons per const. Period - Paving	0.001	0.001	0.010	0.000	0.000	2.200
tons per construction period	0.007	0.009	0.083	0.002	0.001	18.987

Water truck default values can be overridden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day		
Grubbing/Land Clearing - Exhaust		1		40		
Grading/Excavation - Exhaust		1		40		
Drainage/Utilities/Subgrade		1		40		
	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Emission rate - Grading/Excavation (grams/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Pounds per day - Grubbing/Land Clearing	0.01	0.73	0.06	0.01	0.01	148.00
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	0.49
Pound per day - Grading/Excavation	0.01	0.73	0.06	0.01	0.01	148.00
Tons per const. Period - Grading/Excavation	0.00	0.01	0.00	0.00	0.00	2.20
Pound per day - Drainage/Utilities/Subgrade	0.01	0.73	0.06	0.01	0.01	148.00
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.01	0.00	0.00	0.00	1.47

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0.7	7.0	0.0	1.5	0.0
Fugitive Dust - Grading/Excavation		0.7	7.0	0.1	1.5	0.0
Fugitive Dust - Drainage/Utilities/Subgrade		0.7	7.0	0.1	1.5	0.0

Off-Road Equipment Emissions								
Grubbing/Land Clearing	Default	Type	ROG	CO	NOx	PM10	PM2.5	CO2
	Number of Vehicles		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
Override of Default Number of Vehicles	Program-estimate							
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Rubber Tired Dozers	1.28	4.41	13.72	0.64	0.59	943.69
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Scrapers	1.46	7.25	17.70	0.71	0.66	1608.02
	2	Signal Boards	0.73	2.73	2.64	0.19	0.18	314.87
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	3.5	14.4	34.1	1.5	1.4	2866.6
	Grubbing/Land Clearing	tons per phase	0.0	0.0	0.1	0.0	0.0	9.5

Grading/Excavation	Default		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
	Number of Vehicles							
	Override of Default Number of Vehicles	Program-estimate						
		Type						
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	3	Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
1.00	1	Graders	1.07	3.48	10.38	0.58	0.54	671.02
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
1.00	1	Rubber Tired Loaders	0.52	3.12	6.51	0.22	0.20	662.62
1.00	2	Scrapers	1.46	7.25	17.70	0.71	0.66	1608.02
0.00	2	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	3.0	13.9	34.6	1.5	1.4	2941.7
	Grading	tons per phase	0.0	0.2	0.5	0.0	0.0	43.7

Drainage/Utilities/Subgrade	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
Override of Default Number of Vehicles	Program-estimate							
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	1	Graders	1.07	3.48	10.38	0.58	0.54	671.02
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2	Scrapers	1.46	7.25	17.70	0.71	0.66	1608.02
0.00	2	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Trenchers	0.59	2.10	4.94	0.39	0.36	376.85
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	3.2	13.0	33.3	1.7	1.6	2690.3
	Drainage	tons per phase	0.0	0.1	0.3	0.0	0.0	26.6

Paving	Default		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
	Override of Default Number of Vehicles	Number of Vehicles Program-estimate Type						
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pavers	0.42	2.84	4.49	0.22	0.21	481.68
	1	Paving Equipment	0.32	2.69	3.53	0.18	0.16	426.30
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3	Rollers	0.35	1.51	3.09	0.23	0.21	279.53
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	1.1	7.0	11.1	0.6	0.6	1187.5
	Paving	tons per phase	0.0	0.0	0.1	0.0	0.0	5.9
Total Emissions all Phases (tons per construction period) =>			0.1	0.4	1.0	0.0	0.0	85.7

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment		Default Values Horsepower		Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		106		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		10		8
Concrete/Industrial Saws		64		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		142		8
Excavators		163		8
Forklifts		89		8
Generator Sets		66		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		26		8
Pumps		53		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		20		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		45		8

0

END OF DATA ENTRY SHEET



Appendix C

DRILLING AND BLASTING EMISSION CALCULATIONS DATA



Drilling and Blasting

ID	Source	holes/blast	Blast Frequency			Tons ANFO/ Blast
			blasts/day	blasts/month	blasts/year	
B-1	Blasting Activity	12	5	20	40	0.25

Notes

400 sf area of drilling
1,200 lbs (0.6 tons) rock material

Dust - PM10

ID	Source	Area (ft2)	PM10 EF Drilling (lb/hole)	PM2.5 EF Drilling (lb/hole)	Drilling Control Efficiency	PM10 EF Blasting (lb/blast)	PM10 EF Blasting (lb/blast)	PM10 Emissions			PM2.5 Emissions			Source Type
								lb/hr	lb/day	TPY	lb/hr	lb/day	TPY	
B-1	Blasting	400	-	-	-	0.05824	0.00336	0.2912	0.2912	0.005824	0.0168	0.0168	0.0000672	Area
D-1	Drilling	400	0.65	0.12	75%	-	-	0.1625	1.95	0.039	0.03	0.36	0.0072	Area
Total								0.45	2.24	0.04	0.05	0.38	0.01	

Notes:

- Emissions Factor Source: AP-42 5th Edition, Section 11.9, Table 11.9-4, October 1998. Assumes PM10 = TSP/2 = 1.3 lbs/hole / 2 = 0.65 lb/hole.
- Emissions factor for PM2.5 is calculated based on a similar mechanical process for aggregate rock crushing. The emission factors for tertiary rock crushing will be used, based on AP-42 11.19.2, Table 11.19.2-2, Final Section, updated August 2004. The tertiary crushing emission factor for PM10 is 0.00054 lb/ton and the emissions factor for PM2.5 is 0.00010 lb/ton. The ratio of PM2.5 to PM10 is $0.00010/0.00054 = 0.185$. Since the PM10 emission factor is estimated to be 0.65 lb/hole (see note 1), the emission factor for PM2.5 is estimated to be $0.65 \text{ lb/hole} \times 0.185 = 0.12 \text{ lb/hole}$.
- Control Efficiency estimated to be between 63% and 88%, based on drill rotocloner or similar dust shroud device. Assumed midpoint of range reported.
- AP-42 5th Edition, Section 11.9, Table 11.9-1. Also referenced Appendix E.2 of Background document to AP-42 5th Edition, Section 11.9.
PM10 EF = $0.000014(A)^{1.5}(0.52)$, where A = horizontal area in ft2 with a scaling factor for $\leq 10 \text{um}$ of 0.52
PM2.5 EF = $0.000014(A)^{1.5}(0.03)$, where A = horizontal area in ft2 with a scaling factor for $\leq 2.5 \text{um}$ of 0.03
Drill goes up to 20 feet deep for 12 holes. Up to 240 ft/day drilling.

Example Calculation

Blasting PM10 = $(0.058 \text{ lb/blast}) \times (1 \text{ blast/hr}) = 0.058 \text{ lb/hr}$
Blasting PM10 = $(0.058 \text{ lb/day}) \times (5 \text{ blasts/day}) = 0.29 \text{ lb/day}$
Blasting PM10 = $(0.29 \text{ lb/day}) \times (40 \text{ blast/year}) / (2,000 \text{ lb/ton}) = 0.0058 \text{ ton/year}$

- Daily drilling emissions based on ability to drill two holes per hour per drill rig for up to 8 hours per day with one drill rig.
- Based on five blasts for the worst hourly potential to emit (PTE). However, emission rate will be based on average of 5 blasts in an 8-hour day.
- Based on 5 blasts per day, for the maximum daily PTE.

Blasting Gases - ANFO Emission Factors

ID	Source	CO EF lb/ton	NOX EF lb/ton	SOx EF lb/ton	CO2 EF lb/ton	CH4 EF lb/ton	N2O EF lb/ton
B-1	Blasting Activity	67	17	2	566	0.02	0.005

Blasting Gases - ANFO Emission Rates Criteria Pollutants

ID	Emissions	CO (lb/hr)	CO (lb/day)	CO (TPY)	NOx (lb/hr)	NOx (lb/day)	NOx (TPY)	SOx (lb/hr)	SOx (lb/day)	SOx (TPY)	Source Type
B-1	Blasting Activity	16.75	83.75	0.34	4.25	21.25	0.09	0.50	2.50	0.01	Area

Blasting Gases - ANFO Emission Rates Greenhouse Gases

ID	Emissions	CO2 (lb/hr)	CO2 (lb/day)	CO2 (TPY)	CH4 (lb/hr)	CH4 (lb/day)	CH4 (TPY)	N2O (lb/hr)	N2O (lb/day)	N2O (TPY)	Source Type
B-1	Blasting Activity	141.50	707.50	2.83	0.01	0.03	0.0001	0.0013	0.0063	0.0500	Area

Notes:

- Emission Factor Source: AP-42 5th Edition, Section 13.3, Table 13.3-1, February 1980, ND = no data.
Uncontrolled CO2, CH4, and N2O emissions are calculated using the emission factors of 73.96 kg/MMBtu, $3 \times 10^{-3} \text{ kg/MMBtu}$, and $6 \times 10^{-4} \text{ kg/MMBtu}$, respectively, from 40 CFR 98, Tables C-1 and C-2 for distillate fuel oil No. 2. A diesel fuel oil to ammonium nitrate ratio of 9% and a diesel heating value of 19,300 Btu/pound of diesel fuel were used to express the CO2, CH4, and N2O emission factors in terms of lb/ton of ANFO.
- Based on 1 blast for the worst hourly potential to emit (PTE). However, modeled emission rate will be based on average of 5 blasts in an 8-hour day.
- Based on 5 blasts per day, for the maximum daily PTE.



Appendix D

CALEEMOD OPERATIONAL EMISSION DATA



Valiano - 2018 Operations (Phase 1 - N 1 & 5)
San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0
Single Family Housing	165.00	Dwelling Unit	53.57	297,000.00	472

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2018
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Operations only

Vehicle Trips - Trip rates based on TIA (LLG2015)

Woodstoves - No woodburning hearths

Mobile Land Use Mitigation -

Area Mitigation - Rule 67

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	100
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	100
tblConstructionPhase	NumDays	70.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	90.75	148.50
tblFireplaces	NumberWood	57.75	0.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	10.98
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	10.98
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	10.98
tblWoodstoves	NumberCatalytic	8.25	0.00
tblWoodstoves	NumberNoncatalytic	8.25	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

[illegible]

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	10.8212	0.1591	13.7248	7.2000e-004		0.2740	0.2740		0.2719	0.2719	0.0000	3,169.2172	3,169.2172	0.0846	0.0577	3,188.8655
Energy	0.1348	1.1520	0.4902	7.3500e-003		0.0931	0.0931		0.0931	0.0931		1,470.6933	1,470.6933	0.0282	0.0270	1,479.6437
Mobile	6.0417	13.4796	62.4760	0.1623	10.9454	0.1897	11.1351	2.9218	0.1748	3.0966		13,254.0472	13,254.0472	0.5121		13,264.8003
Total	16.9977	14.7908	76.6910	0.1703	10.9454	0.5568	11.5022	2.9218	0.5398	3.4617	0.0000	17,893.9577	17,893.9577	0.6248	0.0846	17,933.3095

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	8.7488	0.1591	13.7248	7.2000e-004		0.2740	0.2740		0.2719	0.2719	0.0000	3,169.2172	3,169.2172	0.0846	0.0577	3,188.8655
Energy	0.1189	1.0156	0.4322	6.4800e-003		0.0821	0.0821		0.0821	0.0821		1,296.5100	1,296.5100	0.0249	0.0238	1,304.4003
Mobile	6.0417	13.4796	62.4760	0.1623	10.9454	0.1897	11.1351	2.9218	0.1748	3.0966		13,254.0472	13,254.0472	0.5121		13,264.8003
Total	14.9094	14.6543	76.6330	0.1695	10.9454	0.5458	11.4912	2.9218	0.5288	3.4506	0.0000	17,719.7744	17,719.7744	0.6215	0.0814	17,758.0662

	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
Percent Reduction	12.29	0.92	0.08	0.51	0.00	1.98	0.10	0.00	2.04	0.32	0.00	0.97	0.97	0.53	3.77	0.98

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	12/31/2015	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Unmitigated	6.0417	13.4796	62.4760	0.1623	10.9454	0.1897	11.1351	2.9218	0.1748	3.0966		13,254.0472	13,254.0472	0.5121		13,264.8003
Mitigated	6.0417	13.4796	62.4760	0.1623	10.9454	0.1897	11.1351	2.9218	0.1748	3.0966		13,254.0472	13,254.0472	0.5121		13,264.8003

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	1,811.70	1,811.70	1,811.70	5,172,953	5,172,953
Total	1,811.70	1,811.70	1,811.70	5,172,953	5,172,953

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

5.0 Energy Detail

5.1 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1189	1.0156	0.4322	6.4800e-003		0.0821	0.0821		0.0821	0.0821		1,296.5100	1,296.5100	0.0249	0.0238	1,304.4003
NaturalGas Unmitigated	0.1348	1.1520	0.4902	7.3500e-003		0.0931	0.0931		0.0931	0.0931		1,470.6933	1,470.6933	0.0282	0.0270	1,479.6437

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	12500.9	0.1348	1.1520	0.4902	7.3500e-003		0.0931	0.0931		0.0931	0.0931		1,470.6933	1,470.6933	0.0282	0.0270	1,479.6437
Total		0.1348	1.1520	0.4902	7.3500e-003		0.0931	0.0931		0.0931	0.0931		1,470.6933	1,470.6933	0.0282	0.0270	1,479.6437

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	11.0203	0.1189	1.0156	0.4322	6.4800e-003		0.0821	0.0821		0.0821	0.0821		1,296.5100	1,296.5100	0.0249	0.0238	1,304.4003
Total		0.1189	1.0156	0.4322	6.4800e-003		0.0821	0.0821		0.0821	0.0821		1,296.5100	1,296.5100	0.0249	0.0238	1,304.4003

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	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					
Unmitigated	10.8212	0.1591	13.7248	7.2000e-004		0.2740	0.2740		0.2719	0.2719	0.0000	3,169.2172	3,169.2172	0.0846	0.0577	3,188.8655
Mitigated	8.7488	0.1591	13.7248	7.2000e-004		0.2740	0.2740		0.2719	0.2719	0.0000	3,169.2172	3,169.2172	0.0846	0.0577	3,188.8655

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	2.8223					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.2880					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.2883	1.0000e-005	0.0157	0.0000		0.1992	0.1992		0.1971	0.1971	0.0000	3,144.7059	3,144.7059	0.0603	0.0577	3,163.8440
Landscaping	0.4226	0.1591	13.7091	7.2000e-004		0.0748	0.0748		0.0748	0.0748		24.5114	24.5114	0.0243		25.0215
Total	10.8212	0.1591	13.7248	7.2000e-004		0.2740	0.2740		0.2719	0.2719	0.0000	3,169.2172	3,169.2172	0.0846	0.0577	3,188.8655

6.2 Area by SubCategory

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	1.2949					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.7431					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.2883	1.0000e-005	0.0157	0.0000		0.1992	0.1992		0.1971	0.1971	0.0000	3,144.7059	3,144.7059	0.0603	0.0577	3,163.8440
Landscaping	0.4226	0.1591	13.7091	7.2000e-004		0.0748	0.0748		0.0748	0.0748		24.5114	24.5114	0.0243		25.0215
Total	8.7488	0.1591	13.7248	7.2000e-004		0.2740	0.2740		0.2719	0.2719	0.0000	3,169.2172	3,169.2172	0.0846	0.0577	3,188.8655

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

Valiano - 2018 Operations (Phase 1 - N 1 & 5)**San Diego County, Winter****1.0 Project Characteristics**

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0
Single Family Housing	165.00	Dwelling Unit	53.57	297,000.00	472

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2018
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Operations only

Vehicle Trips - Trip rates based on TIA (LLG2015)

Woodstoves - No woodburning hearths

Mobile Land Use Mitigation -

Area Mitigation - Rule 67

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	100
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	100
tblConstructionPhase	NumDays	70.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	90.75	148.50
tblFireplaces	NumberWood	57.75	0.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	10.98
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	10.98
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	10.98
tblWoodstoves	NumberCatalytic	8.25	0.00
tblWoodstoves	NumberNoncatalytic	8.25	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

[illegible]

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	10.8212	0.1591	13.7248	7.2000e-004		0.2740	0.2740		0.2719	0.2719	0.0000	3,169.2172	3,169.2172	0.0846	0.0577	3,188.8655
Energy	0.1348	1.1520	0.4902	7.3500e-003		0.0931	0.0931		0.0931	0.0931		1,470.6933	1,470.6933	0.0282	0.0270	1,479.6437
Mobile	6.4144	14.3202	65.4033	0.1542	10.9454	0.1904	11.1358	2.9218	0.1755	3.0973		12,617.0364	12,617.0364	0.5124		12,627.7975
Total	17.3704	15.6314	79.6183	0.1623	10.9454	0.5576	11.5030	2.9218	0.5405	3.4623	0.0000	17,256.9469	17,256.9469	0.6252	0.0846	17,296.3067

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	8.7488	0.1591	13.7248	7.2000e-004		0.2740	0.2740		0.2719	0.2719	0.0000	3,169.2172	3,169.2172	0.0846	0.0577	3,188.8655
Energy	0.1189	1.0156	0.4322	6.4800e-003		0.0821	0.0821		0.0821	0.0821		1,296.5100	1,296.5100	0.0249	0.0238	1,304.4003
Mobile	6.4144	14.3202	65.4033	0.1542	10.9454	0.1904	11.1358	2.9218	0.1755	3.0973		12,617.0364	12,617.0364	0.5124		12,627.7975
Total	15.2821	15.4949	79.5602	0.1614	10.9454	0.5465	11.4919	2.9218	0.5295	3.4513	0.0000	17,082.7636	17,082.7636	0.6219	0.0814	17,121.0633

	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
Percent Reduction	12.02	0.87	0.07	0.54	0.00	1.98	0.10	0.00	2.04	0.32	0.00	1.01	1.01	0.53	3.77	1.01

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	12/31/2015	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Unmitigated	6.4144	14.3202	65.4033	0.1542	10.9454	0.1904	11.1358	2.9218	0.1755	3.0973		12,617.03 64	12,617.03 64	0.5124		12,627.79 75
Mitigated	6.4144	14.3202	65.4033	0.1542	10.9454	0.1904	11.1358	2.9218	0.1755	3.0973		12,617.03 64	12,617.03 64	0.5124		12,627.79 75

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	1,811.70	1,811.70	1,811.70	5,172,953	5,172,953
Total	1,811.70	1,811.70	1,811.70	5,172,953	5,172,953

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

5.0 Energy Detail

5.1 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1189	1.0156	0.4322	6.4800e-003		0.0821	0.0821		0.0821	0.0821		1,296.5100	1,296.5100	0.0249	0.0238	1,304.4003
NaturalGas Unmitigated	0.1348	1.1520	0.4902	7.3500e-003		0.0931	0.0931		0.0931	0.0931		1,470.6933	1,470.6933	0.0282	0.0270	1,479.6437

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	12500.9	0.1348	1.1520	0.4902	7.3500e-003		0.0931	0.0931		0.0931	0.0931		1,470.6933	1,470.6933	0.0282	0.0270	1,479.6437
Total		0.1348	1.1520	0.4902	7.3500e-003		0.0931	0.0931		0.0931	0.0931		1,470.6933	1,470.6933	0.0282	0.0270	1,479.6437

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	11.0203	0.1189	1.0156	0.4322	6.4800e-003		0.0821	0.0821		0.0821	0.0821		1,296.5100	1,296.5100	0.0249	0.0238	1,304.4003
Total		0.1189	1.0156	0.4322	6.4800e-003		0.0821	0.0821		0.0821	0.0821		1,296.5100	1,296.5100	0.0249	0.0238	1,304.4003

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	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					
Unmitigated	10.8212	0.1591	13.7248	7.2000e-004		0.2740	0.2740		0.2719	0.2719	0.0000	3,169.2172	3,169.2172	0.0846	0.0577	3,188.8655
Mitigated	8.7488	0.1591	13.7248	7.2000e-004		0.2740	0.2740		0.2719	0.2719	0.0000	3,169.2172	3,169.2172	0.0846	0.0577	3,188.8655

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	2.8223					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.2880					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.2883	1.0000e-005	0.0157	0.0000		0.1992	0.1992		0.1971	0.1971	0.0000	3,144.7059	3,144.7059	0.0603	0.0577	3,163.8440
Landscaping	0.4226	0.1591	13.7091	7.2000e-004		0.0748	0.0748		0.0748	0.0748		24.5114	24.5114	0.0243		25.0215
Total	10.8212	0.1591	13.7248	7.2000e-004		0.2740	0.2740		0.2719	0.2719	0.0000	3,169.2172	3,169.2172	0.0846	0.0577	3,188.8655

6.2 Area by SubCategory

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	1.2949					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.7431					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.2883	1.0000e-005	0.0157	0.0000		0.1992	0.1992		0.1971	0.1971	0.0000	3,144.7059	3,144.7059	0.0603	0.0577	3,163.8440
Landscaping	0.4226	0.1591	13.7091	7.2000e-004		0.0748	0.0748		0.0748	0.0748		24.5114	24.5114	0.0243		25.0215
Total	8.7488	0.1591	13.7248	7.2000e-004		0.2740	0.2740		0.2719	0.2719	0.0000	3,169.2172	3,169.2172	0.0846	0.0577	3,188.8655

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

Valiano - 2018 Operations (Phase 1 - N 1 & 5)**San Diego County, Mitigation Report****Construction Mitigation Summary**

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Concrete/Industrial Saws	Diesel	No Change	0	1	No Change	0.00
Excavators	Diesel	No Change	0	3	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	2	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction		PM2.5 Reduction			
No	Replace Ground Cover of Area Disturbed	PM10 Reduction		PM2.5 Reduction			
No	Water Exposed Area	PM10 Reduction		PM2.5 Reduction		Frequency (per day)	
No	Unpaved Road Mitigation	Moisture Content %		Vehicle Speed (mph)			
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	54.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	7.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.28	4.28	4.27	4.38	4.28
Hearth	0.00	0.00	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
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	11.83	11.84	11.85	11.94	11.82	11.82	0.00	11.84	11.84	11.99	11.66	11.84
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	20.00	12.25	12.59	19.95	19.55	13.43
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting: Low Density Suburban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00	0.00	0.00	
No	Land Use	Increase Diversity	0.10	0.32		
No	Land Use	Improve Walkability Design	0.00	0.00		
No	Land Use	Improve Destination Accessibility	0.00	0.00		
No	Land Use	Increase Transit Accessibility	0.25	0.00		
No	Land Use	Integrate Below Market Rate Housing	0.00	0.00		
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network	0.00			
No	Neighborhood Enhancements	Provide Traffic Calming Measures	0.25	25.00	25.00	
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00	0.00		
No	Parking Policy Pricing	Unbundle Parking Costs	0.00	0.00		
No	Parking Policy Pricing	On-street Market Pricing	0.00	0.00		
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00	0.00		
No	Transit Improvements	Expand Transit Network	0.00	0.00		
No	Transit Improvements	Increase Transit Frequency	0.00		0.00	
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"	3.00			
No	Commute	Workplace Parking Charge		0.00		
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program	5.00			
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00		
		Total VMT Reduction	0.00		

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
Yes	Only Natural Gas Hearth	
No	No Hearth	
Yes	Use Low VOC Cleaning Supplies	
Yes	Use Low VOC Paint (Residential Interior)	100.00
Yes	Use Low VOC Paint (Residential Exterior)	100.00
No	Use Low VOC Paint (Non-residential Interior)	250.00
No	Use Low VOC Paint (Non-residential Exterior)	250.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	15.00	
Yes	Install High Efficiency Lighting	15.00	
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher	15.00
Fan	50.00
Refrigerator	15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy	0.00	0.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
Yes	Install low-flow bathroom faucet	32.00	
Yes	Install low-flow Kitchen faucet	18.00	
Yes	Install low-flow Toilet	20.00	
Yes	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape	0.00	0.00

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	50.00

Valiano - 2019 Operations (Phase 2 - N 1, 2, & 5)
San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0
Single Family Housing	223.00	Dwelling Unit	72.40	401,400.00	638

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2019
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MW hr)	720.49	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Operations only

Vehicle Trips - LLG 2015

Woodstoves - No woodburning hearths

Mobile Land Use Mitigation -

Area Mitigation - Rule 67

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	100
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	100
tblConstructionPhase	NumDays	70.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	122.65	200.70
tblFireplaces	NumberWood	78.05	0.00
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	11.35
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	11.35
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	11.35
tblWoodstoves	NumberCatalytic	11.15	0.00
tblWoodstoves	NumberNoncatalytic	11.15	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

[illegible]

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	14.1949	0.2142	18.5103	9.7000e-004		0.3705	0.3705		0.3677	0.3677	0.0000	4,283.2450	4,283.2450	0.1140	0.0779	4,309.7934
Energy	0.1822	1.5570	0.6626	9.9400e-003		0.1259	0.1259		0.1259	0.1259		1,987.6642	1,987.6642	0.0381	0.0364	1,999.7608
Mobile	7.9628	17.4645	81.3951	0.2266	15.2911	0.2572	15.5483	4.0818	0.2372	4.3190		17,941.0272	17,941.0272	0.6738		17,955.1760
Total	22.3399	19.2357	100.5679	0.2375	15.2911	0.7535	16.0447	4.0818	0.7308	4.8126	0.0000	24,211.9364	24,211.9364	0.8258	0.1144	24,264.7302

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	11.4186	0.2142	18.5103	9.7000e-004		0.3705	0.3705		0.3677	0.3677	0.0000	4,283.2450	4,283.2450	0.1140	0.0779	4,309.7934
Energy	0.1606	1.3726	0.5841	8.7600e-003		0.1110	0.1110		0.1110	0.1110		1,752.2529	1,752.2529	0.0336	0.0321	1,762.9168
Mobile	7.9628	17.4645	81.3951	0.2266	15.2911	0.2572	15.5483	4.0818	0.2372	4.3190		17,941.0272	17,941.0272	0.6738		17,955.1760
Total	19.5420	19.0513	100.4894	0.2364	15.2911	0.7386	16.0298	4.0818	0.7158	4.7976	0.0000	23,976.5251	23,976.5251	0.8213	0.1100	24,027.8862

	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
Percent Reduction	12.52	0.96	0.08	0.50	0.00	1.98	0.09	0.00	2.04	0.31	0.00	0.97	0.97	0.55	3.78	0.98

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	12/31/2015	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Unmitigated	7.9628	17.4645	81.3951	0.2266	15.2911	0.2572	15.5483	4.0818	0.2372	4.3190		17,941.0272	17,941.0272	0.6738		17,955.1760
Mitigated	7.9628	17.4645	81.3951	0.2266	15.2911	0.2572	15.5483	4.0818	0.2372	4.3190		17,941.0272	17,941.0272	0.6738		17,955.1760

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	2,531.05	2,531.05	2,531.05	7,226,916	7,226,916
Total	2,531.05	2,531.05	2,531.05	7,226,916	7,226,916

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.512639	0.073513	0.191470	0.131122	0.036200	0.005158	0.012615	0.022741	0.001866	0.002067	0.006563	0.000594	0.003452

5.0 Energy Detail

5.1 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1606	1.3726	0.5841	8.7600e-003		0.1110	0.1110		0.1110	0.1110		1,752.2529	1,752.2529	0.0336	0.0321	1,762.9168
NaturalGas Unmitigated	0.1822	1.5570	0.6626	9.9400e-003		0.1259	0.1259		0.1259	0.1259		1,987.6642	1,987.6642	0.0381	0.0364	1,999.7608

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	16895.1	0.1822	1.5570	0.6626	9.9400e-003		0.1259	0.1259		0.1259	0.1259		1,987.6642	1,987.6642	0.0381	0.0364	1,999.7608
Total		0.1822	1.5570	0.6626	9.9400e-003		0.1259	0.1259		0.1259	0.1259		1,987.6642	1,987.6642	0.0381	0.0364	1,999.7608

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	14.8941	0.1606	1.3726	0.5841	8.7600e-003		0.1110	0.1110		0.1110	0.1110		1,752.2529	1,752.2529	0.0336	0.0321	1,762.9168
Total		0.1606	1.3726	0.5841	8.7600e-003		0.1110	0.1110		0.1110	0.1110		1,752.2529	1,752.2529	0.0336	0.0321	1,762.9168

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	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					
Unmitigated	14.1949	0.2142	18.5103	9.7000e-004		0.3705	0.3705		0.3677	0.3677	0.0000	4,283.2450	4,283.2450	0.1140	0.0779	4,309.7934
Mitigated	11.4186	0.2142	18.5103	9.7000e-004		0.3705	0.3705		0.3677	0.3677	0.0000	4,283.2450	4,283.2450	0.1140	0.0779	4,309.7934

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	3.7172					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.5221					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3896	2.0000e-005	0.0213	0.0000		0.2692	0.2692		0.2663	0.2663	0.0000	4,250.1177	4,250.1177	0.0815	0.0779	4,275.9832
Landscaping	0.5660	0.2142	18.4890	9.7000e-004		0.1013	0.1013		0.1013	0.1013		33.1274	33.1274	0.0325		33.8103
Total	14.1949	0.2142	18.5103	9.7000e-004		0.3705	0.3705		0.3677	0.3677	0.0000	4,283.2450	4,283.2450	0.1140	0.0779	4,309.7934

6.2 Area by SubCategory

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	1.6528					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.8102					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3896	2.0000e-005	0.0213	0.0000		0.2692	0.2692		0.2663	0.2663	0.0000	4,250.1177	4,250.1177	0.0815	0.0779	4,275.9832
Landscaping	0.5660	0.2142	18.4890	9.7000e-004		0.1013	0.1013		0.1013	0.1013		33.1274	33.1274	0.0325		33.8103
Total	11.4186	0.2142	18.5103	9.7000e-004		0.3705	0.3705		0.3677	0.3677	0.0000	4,283.2450	4,283.2450	0.1140	0.0779	4,309.7934

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

Valiano - 2019 Operations (Phase 2 - N 1, 2, & 5)
San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0
Single Family Housing	223.00	Dwelling Unit	72.40	401,400.00	638

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2019
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Operations only

Vehicle Trips - LLG 2015

Woodstoves - No woodburning hearths

Mobile Land Use Mitigation -

Area Mitigation - Rule 67

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	100
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	100
tblConstructionPhase	NumDays	70.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	122.65	200.70
tblFireplaces	NumberWood	78.05	0.00
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	11.35
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	11.35
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	11.35
tblWoodstoves	NumberCatalytic	11.15	0.00
tblWoodstoves	NumberNoncatalytic	11.15	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

[illegible]

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	14.1949	0.2142	18.5103	9.7000e-004		0.3705	0.3705		0.3677	0.3677	0.0000	4,283.2450	4,283.2450	0.1140	0.0779	4,309.7934
Energy	0.1822	1.5570	0.6626	9.9400e-003		0.1259	0.1259		0.1259	0.1259		1,987.6642	1,987.6642	0.0381	0.0364	1,999.7608
Mobile	8.4396	18.5512	85.2423	0.2153	15.2911	0.2581	15.5492	4.0818	0.2381	4.3199		17,081.8385	17,081.8385	0.6743		17,095.9988
Total	22.8167	20.3224	104.4151	0.2263	15.2911	0.7545	16.0456	4.0818	0.7316	4.8134	0.0000	23,352.7478	23,352.7478	0.8264	0.1144	23,405.5530

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	11.4186	0.2142	18.5103	9.7000e-004		0.3705	0.3705		0.3677	0.3677	0.0000	4,283.2450	4,283.2450	0.1140	0.0779	4,309.7934
Energy	0.1606	1.3726	0.5841	8.7600e-003		0.1110	0.1110		0.1110	0.1110		1,752.2529	1,752.2529	0.0336	0.0321	1,762.9168
Mobile	8.4396	18.5512	85.2423	0.2153	15.2911	0.2581	15.5492	4.0818	0.2381	4.3199		17,081.8385	17,081.8385	0.6743		17,095.9988
Total	20.0188	20.1380	104.3366	0.2251	15.2911	0.7396	16.0307	4.0818	0.7167	4.7985	0.0000	23,117.3365	23,117.3365	0.8219	0.1100	23,168.7090

	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
Percent Reduction	12.26	0.91	0.08	0.52	0.00	1.98	0.09	0.00	2.04	0.31	0.00	1.01	1.01	0.55	3.78	1.01

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	12/31/2015	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Unmitigated	8.4396	18.5512	85.2423	0.2153	15.2911	0.2581	15.5492	4.0818	0.2381	4.3199		17,081.83 85	17,081.83 85	0.6743		17,095.99 88
Mitigated	8.4396	18.5512	85.2423	0.2153	15.2911	0.2581	15.5492	4.0818	0.2381	4.3199		17,081.83 85	17,081.83 85	0.6743		17,095.99 88

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	2,531.05	2,531.05	2,531.05	7,226,916	7,226,916
Total	2,531.05	2,531.05	2,531.05	7,226,916	7,226,916

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.512639	0.073513	0.191470	0.131122	0.036200	0.005158	0.012615	0.022741	0.001866	0.002067	0.006563	0.000594	0.003452

5.0 Energy Detail

5.1 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1606	1.3726	0.5841	8.7600e-003		0.1110	0.1110		0.1110	0.1110		1,752.2529	1,752.2529	0.0336	0.0321	1,762.9168
NaturalGas Unmitigated	0.1822	1.5570	0.6626	9.9400e-003		0.1259	0.1259		0.1259	0.1259		1,987.6642	1,987.6642	0.0381	0.0364	1,999.7608

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	16895.1	0.1822	1.5570	0.6626	9.9400e-003		0.1259	0.1259		0.1259	0.1259		1,987.6642	1,987.6642	0.0381	0.0364	1,999.7608
Total		0.1822	1.5570	0.6626	9.9400e-003		0.1259	0.1259		0.1259	0.1259		1,987.6642	1,987.6642	0.0381	0.0364	1,999.7608

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	14.8941	0.1606	1.3726	0.5841	8.7600e-003		0.1110	0.1110		0.1110	0.1110		1,752.2529	1,752.2529	0.0336	0.0321	1,762.9168
Total		0.1606	1.3726	0.5841	8.7600e-003		0.1110	0.1110		0.1110	0.1110		1,752.2529	1,752.2529	0.0336	0.0321	1,762.9168

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	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					
Unmitigated	14.1949	0.2142	18.5103	9.7000e-004		0.3705	0.3705		0.3677	0.3677	0.0000	4,283.2450	4,283.2450	0.1140	0.0779	4,309.7934
Mitigated	11.4186	0.2142	18.5103	9.7000e-004		0.3705	0.3705		0.3677	0.3677	0.0000	4,283.2450	4,283.2450	0.1140	0.0779	4,309.7934

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	3.7172					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.5221					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3896	2.0000e-005	0.0213	0.0000		0.2692	0.2692		0.2663	0.2663	0.0000	4,250.1177	4,250.1177	0.0815	0.0779	4,275.9832
Landscaping	0.5660	0.2142	18.4890	9.7000e-004		0.1013	0.1013		0.1013	0.1013		33.1274	33.1274	0.0325		33.8103
Total	14.1949	0.2142	18.5103	9.7000e-004		0.3705	0.3705		0.3677	0.3677	0.0000	4,283.2450	4,283.2450	0.1140	0.0779	4,309.7934

6.2 Area by SubCategory

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	1.6528					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.8102					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3896	2.0000e-005	0.0213	0.0000		0.2692	0.2692		0.2663	0.2663	0.0000	4,250.1177	4,250.1177	0.0815	0.0779	4,275.9832
Landscaping	0.5660	0.2142	18.4890	9.7000e-004		0.1013	0.1013		0.1013	0.1013		33.1274	33.1274	0.0325		33.8103
Total	11.4186	0.2142	18.5103	9.7000e-004		0.3705	0.3705		0.3677	0.3677	0.0000	4,283.2450	4,283.2450	0.1140	0.0779	4,309.7934

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

Valiano - 2019 Operations (Phase 2 - N 1, 2, & 5)**San Diego County, Mitigation Report****Construction Mitigation Summary**

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Concrete/Industrial Saws	Diesel	No Change	0	1	No Change	0.00
Excavators	Diesel	No Change	0	3	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	2	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction		PM2.5 Reduction			
No	Replace Ground Cover of Area Disturbed	PM10 Reduction		PM2.5 Reduction			
No	Water Exposed Area	PM10 Reduction		PM2.5 Reduction		Frequency (per day)	
No	Unpaved Road Mitigation	Moisture Content %		Vehicle Speed (mph)			
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	55.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	7.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.28	4.28	4.31	4.17	4.28
Hearth	0.00	0.00	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
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	11.85	11.84	11.84	11.60	11.84	11.84	0.00	11.84	11.84	11.89	11.77	11.84
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	20.00	12.44	12.77	19.95	19.57	13.60
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting: Low Density Suburban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00	0.00	0.00	
No	Land Use	Increase Diversity	0.08	0.28		
No	Land Use	Improve Walkability Design	0.00	0.00		
No	Land Use	Improve Destination Accessibility	0.00	0.00		
No	Land Use	Increase Transit Accessibility	0.25	0.00		
No	Land Use	Integrate Below Market Rate Housing	0.00	0.00		
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network	0.00			
No	Neighborhood Enhancements	Provide Traffic Calming Measures	0.25	25.00	25.00	
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00	0.00		
No	Parking Policy Pricing	Unbundle Parking Costs	0.00	0.00		
No	Parking Policy Pricing	On-street Market Pricing	0.00	0.00		
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00	0.00		
No	Transit Improvements	Expand Transit Network	0.00	0.00		
No	Transit Improvements	Increase Transit Frequency	0.00		0.00	
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"	3.00			
No	Commute	Workplace Parking Charge		0.00		
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program	5.00			
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00		
		Total VMT Reduction	0.00		

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
Yes	Only Natural Gas Hearth	
No	No Hearth	
Yes	Use Low VOC Cleaning Supplies	
Yes	Use Low VOC Paint (Residential Interior)	100.00
Yes	Use Low VOC Paint (Residential Exterior)	100.00
No	Use Low VOC Paint (Non-residential Interior)	250.00
No	Use Low VOC Paint (Non-residential Exterior)	250.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	15.00	
Yes	Install High Efficiency Lighting	15.00	
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher	15.00
Fan	50.00
Refrigerator	15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy	0.00	0.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
Yes	Install low-flow bathroom faucet	32.00	
Yes	Install low-flow Kitchen faucet	18.00	
Yes	Install low-flow Toilet	20.00	
Yes	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape	0.00	0.00

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	50.00

Valiano - 2019 Operations (Phase 3 - N 1-3 & 5)
San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0
Single Family Housing	258.00	Dwelling Unit	83.77	464,400.00	738

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2019
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Operations only

Vehicle Trips - LLG 2015

Woodstoves - No woodburning hearths

Mobile Land Use Mitigation -

Area Mitigation - Rule 67

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	100
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	100
tblConstructionPhase	NumDays	100.00	0.00
tblFireplaces	NumberGas	141.90	232.20
tblFireplaces	NumberWood	90.30	0.00
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	11.69
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	11.69
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	11.69
tblWoodstoves	NumberCatalytic	12.90	0.00
tblWoodstoves	NumberNoncatalytic	12.90	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

[illegible]

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	16.2331	0.2478	21.4154	1.1200e-003		0.4286	0.4286		0.4254	0.4254	0.0000	4,955.5032	4,955.5032	0.1319	0.0902	4,986.2183
Energy	0.2108	1.8014	0.7665	0.0115		0.1456	0.1456		0.1456	0.1456		2,299.6295	2,299.6295	0.0441	0.0422	2,313.6246
Mobile	9.4885	20.8109	96.9911	0.2701	18.2210	0.3064	18.5275	4.8639	0.2827	5.1466		21,378.6755	21,378.6755	0.8029		21,395.5354
Total	25.9324	22.8600	119.1730	0.2827	18.2210	0.8807	19.1017	4.8639	0.8537	5.7176	0.0000	28,633.8082	28,633.8082	0.9788	0.1323	28,695.3784

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	13.0320	0.2478	21.4154	1.1200e-003		0.4286	0.4286		0.4254	0.4254	0.0000	4,955.5032	4,955.5032	0.1319	0.0902	4,986.2183
Energy	0.1858	1.5880	0.6758	0.0101		0.1284	0.1284		0.1284	0.1284		2,027.2702	2,027.2702	0.0389	0.0372	2,039.6078
Mobile	9.4885	20.8109	96.9911	0.2701	18.2210	0.3064	18.5275	4.8639	0.2827	5.1466		21,378.6755	21,378.6755	0.8029		21,395.5354
Total	22.7063	22.6467	119.0823	0.2813	18.2210	0.8635	19.0845	4.8639	0.8364	5.7003	0.0000	28,361.4489	28,361.4489	0.9736	0.1273	28,421.3615

	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
Percent Reduction	12.44	0.93	0.08	0.48	0.00	1.96	0.09	0.00	2.02	0.30	0.00	0.95	0.95	0.53	3.77	0.95

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	12/31/2015	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Unmitigated	9.4885	20.8109	96.9911	0.2701	18.2210	0.3064	18.5275	4.8639	0.2827	5.1466		21,378.6755	21,378.6755	0.8029		21,395.5354
Mitigated	9.4885	20.8109	96.9911	0.2701	18.2210	0.3064	18.5275	4.8639	0.2827	5.1466		21,378.6755	21,378.6755	0.8029		21,395.5354

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	3,016.02	3,016.02	3,016.02	8,611,652	8,611,652
Total	3,016.02	3,016.02	3,016.02	8,611,652	8,611,652

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.512639	0.073513	0.191470	0.131122	0.036200	0.005158	0.012615	0.022741	0.001866	0.002067	0.006563	0.000594	0.003452

5.0 Energy Detail

5.1 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1858	1.5880	0.6758	0.0101		0.1284	0.1284		0.1284	0.1284		2,027.2702	2,027.2702	0.0389	0.0372	2,039.6078
NaturalGas Unmitigated	0.2108	1.8014	0.7665	0.0115		0.1456	0.1456		0.1456	0.1456		2,299.6295	2,299.6295	0.0441	0.0422	2,313.6246

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	19546.9	0.2108	1.8014	0.7665	0.0115		0.1456	0.1456		0.1456	0.1456		2,299.6295	2,299.6295	0.0441	0.0422	2,313.6246
Total		0.2108	1.8014	0.7665	0.0115		0.1456	0.1456		0.1456	0.1456		2,299.6295	2,299.6295	0.0441	0.0422	2,313.6246

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	17.2318	0.1858	1.5880	0.6758	0.0101		0.1284	0.1284		0.1284	0.1284		2,027.2702	2,027.2702	0.0389	0.0372	2,039.6078
Total		0.1858	1.5880	0.6758	0.0101		0.1284	0.1284		0.1284	0.1284		2,027.2702	2,027.2702	0.0389	0.0372	2,039.6078

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	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					
Unmitigated	16.2331	0.2478	21.4154	1.1200e-003		0.4286	0.4286		0.4254	0.4254	0.0000	4,955.503 2	4,955.503 2	0.1319	0.0902	4,986.218 3
Mitigated	13.0320	0.2478	21.4154	1.1200e-003		0.4286	0.4286		0.4254	0.4254	0.0000	4,955.503 2	4,955.503 2	0.1319	0.0902	4,986.218 3

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	4.2572					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.8703					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4507	2.0000e-005	0.0246	0.0000		0.3114	0.3114		0.3081	0.3081	0.0000	4,917.1765	4,917.1765	0.0943	0.0902	4,947.1016
Landscaping	0.6548	0.2478	21.3909	1.1200e-003		0.1172	0.1172		0.1172	0.1172		38.3267	38.3267	0.0376		39.1168
Total	16.2331	0.2478	21.4154	1.1200e-003		0.4286	0.4286		0.4254	0.4254	0.0000	4,955.5032	4,955.5032	0.1319	0.0902	4,986.2183

6.2 Area by SubCategory

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	1.8688					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.0576					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4507	2.0000e-005	0.0246	0.0000		0.3114	0.3114		0.3081	0.3081	0.0000	4,917.1765	4,917.1765	0.0943	0.0902	4,947.1016
Landscaping	0.6548	0.2478	21.3909	1.1200e-003		0.1172	0.1172		0.1172	0.1172		38.3267	38.3267	0.0376		39.1168
Total	13.0320	0.2478	21.4154	1.1200e-003		0.4286	0.4286		0.4254	0.4254	0.0000	4,955.5032	4,955.5032	0.1319	0.0902	4,986.2183

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

Valiano - 2019 Operations (Phase 3 - N 1-3 & 5)
San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0
Single Family Housing	258.00	Dwelling Unit	83.77	464,400.00	738

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2019
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Operations only

Vehicle Trips - LLG 2015

Woodstoves - No woodburning hearths

Mobile Land Use Mitigation -

Area Mitigation - Rule 67

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	100
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	100
tblConstructionPhase	NumDays	100.00	0.00
tblFireplaces	NumberGas	141.90	232.20
tblFireplaces	NumberWood	90.30	0.00
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	11.69
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	11.69
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	11.69
tblWoodstoves	NumberCatalytic	12.90	0.00
tblWoodstoves	NumberNoncatalytic	12.90	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

[illegible]

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	16.2331	0.2478	21.4154	1.1200e-003		0.4286	0.4286		0.4254	0.4254	0.0000	4,955.5032	4,955.5032	0.1319	0.0902	4,986.2183
Energy	0.2108	1.8014	0.7665	0.0115		0.1456	0.1456		0.1456	0.1456		2,299.6295	2,299.6295	0.0441	0.0422	2,313.6246
Mobile	10.0567	22.1058	101.5754	0.2566	18.2210	0.3076	18.5286	4.8639	0.2837	5.1476		20,354.8593	20,354.8593	0.8035		20,371.7328
Total	26.5006	24.1550	123.7574	0.2692	18.2210	0.8818	19.1029	4.8639	0.8547	5.7186	0.0000	27,609.9920	27,609.9920	0.9795	0.1323	27,671.5757

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	13.0320	0.2478	21.4154	1.1200e-003		0.4286	0.4286		0.4254	0.4254	0.0000	4,955.5032	4,955.5032	0.1319	0.0902	4,986.2183
Energy	0.1858	1.5880	0.6758	0.0101		0.1284	0.1284		0.1284	0.1284		2,027.2702	2,027.2702	0.0389	0.0372	2,039.6078
Mobile	10.0567	22.1058	101.5754	0.2566	18.2210	0.3076	18.5286	4.8639	0.2837	5.1476		20,354.8593	20,354.8593	0.8035		20,371.7328
Total	23.2745	23.9416	123.6666	0.2679	18.2210	0.8646	19.0856	4.8639	0.8374	5.7013	0.0000	27,337.6327	27,337.6327	0.9742	0.1273	27,397.5589

	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
Percent Reduction	12.17	0.88	0.07	0.51	0.00	1.96	0.09	0.00	2.02	0.30	0.00	0.99	0.99	0.53	3.77	0.99

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	12/31/2015	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Unmitigated	10.0567	22.1058	101.5754	0.2566	18.2210	0.3076	18.5286	4.8639	0.2837	5.1476		20,354.85 93	20,354.85 93	0.8035		20,371.73 28
Mitigated	10.0567	22.1058	101.5754	0.2566	18.2210	0.3076	18.5286	4.8639	0.2837	5.1476		20,354.85 93	20,354.85 93	0.8035		20,371.73 28

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	3,016.02	3,016.02	3,016.02	8,611,652	8,611,652
Total	3,016.02	3,016.02	3,016.02	8,611,652	8,611,652

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.512639	0.073513	0.191470	0.131122	0.036200	0.005158	0.012615	0.022741	0.001866	0.002067	0.006563	0.000594	0.003452

5.0 Energy Detail

5.1 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1858	1.5880	0.6758	0.0101		0.1284	0.1284		0.1284	0.1284		2,027.2702	2,027.2702	0.0389	0.0372	2,039.6078
NaturalGas Unmitigated	0.2108	1.8014	0.7665	0.0115		0.1456	0.1456		0.1456	0.1456		2,299.6295	2,299.6295	0.0441	0.0422	2,313.6246

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	19546.9	0.2108	1.8014	0.7665	0.0115		0.1456	0.1456		0.1456	0.1456		2,299.6295	2,299.6295	0.0441	0.0422	2,313.6246
Total		0.2108	1.8014	0.7665	0.0115		0.1456	0.1456		0.1456	0.1456		2,299.6295	2,299.6295	0.0441	0.0422	2,313.6246

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	17.2318	0.1858	1.5880	0.6758	0.0101		0.1284	0.1284		0.1284	0.1284		2,027.2702	2,027.2702	0.0389	0.0372	2,039.6078
Total		0.1858	1.5880	0.6758	0.0101		0.1284	0.1284		0.1284	0.1284		2,027.2702	2,027.2702	0.0389	0.0372	2,039.6078

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	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					
Unmitigated	16.2331	0.2478	21.4154	1.1200e-003		0.4286	0.4286		0.4254	0.4254	0.0000	4,955.503 2	4,955.503 2	0.1319	0.0902	4,986.218 3
Mitigated	13.0320	0.2478	21.4154	1.1200e-003		0.4286	0.4286		0.4254	0.4254	0.0000	4,955.503 2	4,955.503 2	0.1319	0.0902	4,986.218 3

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	4.2572					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.8703					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4507	2.0000e-005	0.0246	0.0000		0.3114	0.3114		0.3081	0.3081	0.0000	4,917.1765	4,917.1765	0.0943	0.0902	4,947.1016
Landscaping	0.6548	0.2478	21.3909	1.1200e-003		0.1172	0.1172		0.1172	0.1172		38.3267	38.3267	0.0376		39.1168
Total	16.2331	0.2478	21.4154	1.1200e-003		0.4286	0.4286		0.4254	0.4254	0.0000	4,955.5032	4,955.5032	0.1319	0.0902	4,986.2183

6.2 Area by SubCategory

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	1.8688					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.0576					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4507	2.0000e-005	0.0246	0.0000		0.3114	0.3114		0.3081	0.3081	0.0000	4,917.1765	4,917.1765	0.0943	0.0902	4,947.1016
Landscaping	0.6548	0.2478	21.3909	1.1200e-003		0.1172	0.1172		0.1172	0.1172		38.3267	38.3267	0.0376		39.1168
Total	13.0320	0.2478	21.4154	1.1200e-003		0.4286	0.4286		0.4254	0.4254	0.0000	4,955.5032	4,955.5032	0.1319	0.0902	4,986.2183

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

Valiano - 2019 Operations (Phase 3 - N 1-3 & 5)**San Diego County, Mitigation Report****Construction Mitigation Summary**

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Concrete/Industrial Saws	Diesel	No Change	0	1	No Change	0.00
Excavators	Diesel	No Change	0	3	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	2	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction		PM2.5 Reduction			
No	Replace Ground Cover of Area Disturbed	PM10 Reduction		PM2.5 Reduction			
No	Water Exposed Area	PM10 Reduction		PM2.5 Reduction		Frequency (per day)	
No	Unpaved Road Mitigation	Moisture Content %		Vehicle Speed (mph)			
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	56.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	7.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.28	4.28	4.30	4.20	4.28
Hearth	0.00	0.00	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
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	11.85	11.84	11.84	11.90	11.85	11.85	0.00	11.84	11.84	11.92	11.89	11.84
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	20.00	12.51	12.85	19.95	19.58	13.67
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting: Low Density Suburban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00	0.00	0.00	
No	Land Use	Increase Diversity	0.07	0.27		
No	Land Use	Improve Walkability Design	0.00	0.00		
No	Land Use	Improve Destination Accessibility	0.00	0.00		
No	Land Use	Increase Transit Accessibility	0.25	0.00		
No	Land Use	Integrate Below Market Rate Housing	0.00	0.00		
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network	0.00			
No	Neighborhood Enhancements	Provide Traffic Calming Measures	0.25	25.00	25.00	
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00	0.00		
No	Parking Policy Pricing	Unbundle Parking Costs	0.00	0.00		
No	Parking Policy Pricing	On-street Market Pricing	0.00	0.00		
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00	0.00		
No	Transit Improvements	Expand Transit Network	0.00	0.00		
No	Transit Improvements	Increase Transit Frequency	0.00		0.00	
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"	3.00			
No	Commute	Workplace Parking Charge		0.00		
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program	5.00			
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
Yes	Only Natural Gas Hearth	
No	No Hearth	
Yes	Use Low VOC Cleaning Supplies	
Yes	Use Low VOC Paint (Residential Interior)	100.00
Yes	Use Low VOC Paint (Residential Exterior)	100.00
No	Use Low VOC Paint (Non-residential Interior)	250.00
No	Use Low VOC Paint (Non-residential Exterior)	250.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	15.00	
Yes	Install High Efficiency Lighting	15.00	
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher	15.00
Fan	50.00
Refrigerator	15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy	0.00	0.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
Yes	Install low-flow bathroom faucet	32.00	
Yes	Install low-flow Kitchen faucet	18.00	
Yes	Install low-flow Toilet	20.00	
Yes	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape	0.00	0.00

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	50.00

Valiano - 2020 Operations (Phase 4 - N 1-5)
San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	3.50	Acre	3.50	152,460.00	0
Single Family Housing	334.00	Dwelling Unit	108.44	601,200.00	955

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Operations Only

Vehicle Trips - LLG 2015

Woodstoves - No woodburning hearths

Mobile Land Use Mitigation -

Area Mitigation - Rule 67

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	100
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	100
tblConstructionPhase	NumDays	200.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	183.70	300.60
tblFireplaces	NumberWood	116.90	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	11.31
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	11.31
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	11.31
tblWoodstoves	NumberCatalytic	16.70	0.00
tblWoodstoves	NumberNoncatalytic	16.70	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

[illegible]

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	23.6750	0.3198	27.6792	1.4600e-003		0.5552	0.5552		0.5509	0.5509	0.0000	6,415.2643	6,415.2643	0.1704	0.1167	6,455.0206
Energy	0.2729	2.3320	0.9924	0.0149		0.1886	0.1886		0.1886	0.1886		2,977.0397	2,977.0397	0.0571	0.0546	2,995.1575
Mobile	11.3649	23.6593	114.8999	0.3382	22.8212	0.3707	23.1920	6.0917	0.3421	6.4338		25,822.1236	25,822.1236	0.9564		25,842.2079
Total	35.3128	26.3111	143.5714	0.3545	22.8212	1.1145	23.9357	6.0917	1.0816	7.1733	0.0000	35,214.4276	35,214.4276	1.1839	0.1713	35,292.3860

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	19.3772	0.3198	27.6792	1.4600e-003		0.5552	0.5552		0.5509	0.5509	0.0000	6,415.2643	6,415.2643	0.1704	0.1167	6,455.0206
Energy	0.2406	2.0558	0.8748	0.0131		0.1662	0.1662		0.1662	0.1662		2,624.4505	2,624.4505	0.0503	0.0481	2,640.4225
Mobile	11.3649	23.6593	114.8999	0.3382	22.8212	0.3707	23.1920	6.0917	0.3421	6.4338		25,822.1236	25,822.1236	0.9564		25,842.2079
Total	30.9827	26.0349	143.4539	0.3528	22.8212	1.0921	23.9134	6.0917	1.0593	7.1510	0.0000	34,861.8384	34,861.8384	1.1771	0.1648	34,937.6510

	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
Percent Reduction	12.26	1.05	0.08	0.50	0.00	2.00	0.09	0.00	2.06	0.31	0.00	1.00	1.00	0.57	3.78	1.01

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	12/31/2015	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Unmitigated	11.3649	23.6593	114.8999	0.3382	22.8212	0.3707	23.1920	6.0917	0.3421	6.4338		25,822.12 36	25,822.12 36	0.9564		25,842.20 79
Mitigated	11.3649	23.6593	114.8999	0.3382	22.8212	0.3707	23.1920	6.0917	0.3421	6.4338		25,822.12 36	25,822.12 36	0.9564		25,842.20 79

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	3,777.54	3,777.54	3,777.54	10,786,023	10,786,023
Total	3,777.54	3,777.54	3,777.54	10,786,023	10,786,023

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

5.1 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2406	2.0558	0.8748	0.0131		0.1662	0.1662		0.1662	0.1662		2,624.4505	2,624.4505	0.0503	0.0481	2,640.4225
NaturalGas Unmitigated	0.2729	2.3320	0.9924	0.0149		0.1886	0.1886		0.1886	0.1886		2,977.0397	2,977.0397	0.0571	0.0546	2,995.1575

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	25304.8	0.2729	2.3320	0.9924	0.0149		0.1886	0.1886		0.1886	0.1886		2,977.0397	2,977.0397	0.0571	0.0546	2,995.1575
Total		0.2729	2.3320	0.9924	0.0149		0.1886	0.1886		0.1886	0.1886		2,977.0397	2,977.0397	0.0571	0.0546	2,995.1575

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	22.3078	0.2406	2.0558	0.8748	0.0131		0.1662	0.1662		0.1662	0.1662		2,624.4505	2,624.4505	0.0503	0.0481	2,640.4225
Total		0.2406	2.0558	0.8748	0.0131		0.1662	0.1662		0.1662	0.1662		2,624.4505	2,624.4505	0.0503	0.0481	2,640.4225

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	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					
Unmitigated	23.6750	0.3198	27.6792	1.4600e-003		0.5552	0.5552		0.5509	0.5509	0.0000	6,415.2643	6,415.2643	0.1704	0.1167	6,455.0206
Mitigated	19.3772	0.3198	27.6792	1.4600e-003		0.5552	0.5552		0.5509	0.5509	0.0000	6,415.2643	6,415.2643	0.1704	0.1167	6,455.0206

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	6.1213					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	16.1283					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.5835	3.0000e-005	0.0318	0.0000		0.4032	0.4032		0.3989	0.3989	0.0000	6,365.647 1	6,365.647 1	0.1220	0.1167	6,404.387 3
Landscaping	0.8419	0.3198	27.6474	1.4600e-003		0.1520	0.1520		0.1520	0.1520		49.6173	49.6173	0.0484		50.6333
Total	23.6750	0.3198	27.6792	1.4600e-003		0.5552	0.5552		0.5509	0.5509	0.0000	6,415.264 3	6,415.264 3	0.1704	0.1167	6,455.020 6

6.2 Area by SubCategory

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	3.0293					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	14.9225					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.5835	3.0000e-005	0.0318	0.0000		0.4032	0.4032		0.3989	0.3989	0.0000	6,365.647 1	6,365.647 1	0.1220	0.1167	6,404.387 3
Landscaping	0.8419	0.3198	27.6474	1.4600e-003		0.1520	0.1520		0.1520	0.1520		49.6173	49.6173	0.0484		50.6333
Total	19.3772	0.3198	27.6792	1.4600e-003		0.5552	0.5552		0.5509	0.5509	0.0000	6,415.264 3	6,415.264 3	0.1704	0.1167	6,455.020 6

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

Valiano - 2020 Operations (Phase 4 - N 1-5)
San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	3.50	Acre	3.50	152,460.00	0
Single Family Housing	334.00	Dwelling Unit	108.44	601,200.00	955

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Operations Only

Vehicle Trips - LLG 2015

Woodstoves - No woodburning hearths

Mobile Land Use Mitigation -

Area Mitigation - Rule 67

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	100
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	100
tblConstructionPhase	NumDays	200.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	183.70	300.60
tblFireplaces	NumberWood	116.90	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	11.31
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	11.31
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	11.31
tblWoodstoves	NumberCatalytic	16.70	0.00
tblWoodstoves	NumberNoncatalytic	16.70	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

[illegible]

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	23.6750	0.3198	27.6792	1.4600e-003		0.5552	0.5552		0.5509	0.5509	0.0000	6,415.2643	6,415.2643	0.1704	0.1167	6,455.0206
Energy	0.2729	2.3320	0.9924	0.0149		0.1886	0.1886		0.1886	0.1886		2,977.0397	2,977.0397	0.0571	0.0546	2,995.1575
Mobile	12.0325	25.1533	120.4083	0.3213	22.8212	0.3720	23.1932	6.0917	0.3432	6.4350		24,589.5419	24,589.5419	0.9572		24,609.6439
Total	35.9804	27.8051	149.0799	0.3377	22.8212	1.1157	23.9369	6.0917	1.0827	7.1745	0.0000	33,981.8459	33,981.8459	1.1847	0.1713	34,059.8220

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	19.3772	0.3198	27.6792	1.4600e-003		0.5552	0.5552		0.5509	0.5509	0.0000	6,415.2643	6,415.2643	0.1704	0.1167	6,455.0206
Energy	0.2406	2.0558	0.8748	0.0131		0.1662	0.1662		0.1662	0.1662		2,624.4505	2,624.4505	0.0503	0.0481	2,640.4225
Mobile	12.0325	25.1533	120.4083	0.3213	22.8212	0.3720	23.1932	6.0917	0.3432	6.4350		24,589.5419	24,589.5419	0.9572		24,609.6439
Total	31.6502	27.5289	148.9623	0.3359	22.8212	1.0934	23.9146	6.0917	1.0604	7.1521	0.0000	33,629.2567	33,629.2567	1.1779	0.1648	33,705.0870

	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
Percent Reduction	12.03	0.99	0.08	0.52	0.00	2.00	0.09	0.00	2.06	0.31	0.00	1.04	1.04	0.57	3.78	1.04

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	12/31/2015	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Unmitigated	12.0325	25.1533	120.4083	0.3213	22.8212	0.3720	23.1932	6.0917	0.3432	6.4350		24,589.54 19	24,589.54 19	0.9572		24,609.64 39
Mitigated	12.0325	25.1533	120.4083	0.3213	22.8212	0.3720	23.1932	6.0917	0.3432	6.4350		24,589.54 19	24,589.54 19	0.9572		24,609.64 39

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	3,777.54	3,777.54	3,777.54	10,786,023	10,786,023
Total	3,777.54	3,777.54	3,777.54	10,786,023	10,786,023

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

5.1 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2406	2.0558	0.8748	0.0131		0.1662	0.1662		0.1662	0.1662		2,624.4505	2,624.4505	0.0503	0.0481	2,640.4225
NaturalGas Unmitigated	0.2729	2.3320	0.9924	0.0149		0.1886	0.1886		0.1886	0.1886		2,977.0397	2,977.0397	0.0571	0.0546	2,995.1575

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	25304.8	0.2729	2.3320	0.9924	0.0149		0.1886	0.1886		0.1886	0.1886		2,977.0397	2,977.0397	0.0571	0.0546	2,995.1575
Total		0.2729	2.3320	0.9924	0.0149		0.1886	0.1886		0.1886	0.1886		2,977.0397	2,977.0397	0.0571	0.0546	2,995.1575

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	22.3078	0.2406	2.0558	0.8748	0.0131		0.1662	0.1662		0.1662	0.1662		2,624.4505	2,624.4505	0.0503	0.0481	2,640.4225
Total		0.2406	2.0558	0.8748	0.0131		0.1662	0.1662		0.1662	0.1662		2,624.4505	2,624.4505	0.0503	0.0481	2,640.4225

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	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					
Unmitigated	23.6750	0.3198	27.6792	1.4600e-003		0.5552	0.5552		0.5509	0.5509	0.0000	6,415.2643	6,415.2643	0.1704	0.1167	6,455.0206
Mitigated	19.3772	0.3198	27.6792	1.4600e-003		0.5552	0.5552		0.5509	0.5509	0.0000	6,415.2643	6,415.2643	0.1704	0.1167	6,455.0206

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	6.1213					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	16.1283					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.5835	3.0000e-005	0.0318	0.0000		0.4032	0.4032		0.3989	0.3989	0.0000	6,365.647 1	6,365.647 1	0.1220	0.1167	6,404.387 3
Landscaping	0.8419	0.3198	27.6474	1.4600e-003		0.1520	0.1520		0.1520	0.1520		49.6173	49.6173	0.0484		50.6333
Total	23.6750	0.3198	27.6792	1.4600e-003		0.5552	0.5552		0.5509	0.5509	0.0000	6,415.264 3	6,415.264 3	0.1704	0.1167	6,455.020 6

6.2 Area by SubCategory

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	3.0293					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	14.9225					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.5835	3.0000e-005	0.0318	0.0000		0.4032	0.4032		0.3989	0.3989	0.0000	6,365.647 1	6,365.647 1	0.1220	0.1167	6,404.387 3
Landscaping	0.8419	0.3198	27.6474	1.4600e-003		0.1520	0.1520		0.1520	0.1520		49.6173	49.6173	0.0484		50.6333
Total	19.3772	0.3198	27.6792	1.4600e-003		0.5552	0.5552		0.5509	0.5509	0.0000	6,415.264 3	6,415.264 3	0.1704	0.1167	6,455.020 6

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

Valiano - 2020 Operations (Phase 4 - N 1-5)
San Diego County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Concrete/Industrial Saws	Diesel	No Change	0	1	No Change	0.00
Excavators	Diesel	No Change	0	3	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	2	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction		PM2.5 Reduction			
No	Replace Ground Cover of Area Disturbed	PM10 Reduction		PM2.5 Reduction			
No	Water Exposed Area	PM10 Reduction		PM2.5 Reduction		Frequency (per day)	
No	Unpaved Road Mitigation	Moisture Content %		Vehicle Speed (mph)			
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	50.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	7.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.28	4.28	4.28	4.32	4.28
Hearth	0.00	0.00	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
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	11.85	11.84	11.84	12.13	11.86	11.86	0.00	11.84	11.84	11.85	11.84	11.84
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	20.00	11.75	12.10	19.94	19.55	12.96
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting: Low Density Suburban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00	0.00	0.00	
No	Land Use	Increase Diversity	0.14	0.38		
No	Land Use	Improve Walkability Design	0.00	0.00		
No	Land Use	Improve Destination Accessibility	0.00	0.00		
No	Land Use	Increase Transit Accessibility	0.25	0.00		
No	Land Use	Integrate Below Market Rate Housing	0.00	0.00		
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network	0.00			
No	Neighborhood Enhancements	Provide Traffic Calming Measures	0.25	25.00	25.00	
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00	0.00		
No	Parking Policy Pricing	Unbundle Parking Costs	0.00	0.00		
No	Parking Policy Pricing	On-street Market Pricing	0.00	0.00		
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00	0.00		
No	Transit Improvements	Expand Transit Network	0.00	0.00		
No	Transit Improvements	Increase Transit Frequency	0.00		0.00	
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"	3.00			
No	Commute	Workplace Parking Charge		0.00		
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program	5.00			
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00		
		Total VMT Reduction	0.00		

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
Yes	Only Natural Gas Hearth	
No	No Hearth	
Yes	Use Low VOC Cleaning Supplies	
Yes	Use Low VOC Paint (Residential Interior)	100.00
Yes	Use Low VOC Paint (Residential Exterior)	100.00
No	Use Low VOC Paint (Non-residential Interior)	250.00
No	Use Low VOC Paint (Non-residential Exterior)	250.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	15.00	
Yes	Install High Efficiency Lighting	15.00	
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher	15.00
Fan	50.00
Refrigerator	15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy	0.00	0.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
Yes	Install low-flow bathroom faucet	32.00	
Yes	Install low-flow Kitchen faucet	18.00	
Yes	Install low-flow Toilet	20.00	
Yes	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape	0.00	0.00

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	50.00

Valiano - Wastewater Treatment and Water Reclamation Facility (WTWRF)

San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	21.60	1000sqft	0.50	21,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2018
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Concurrent with backbone infrastructure of Phase 1 (neighborhoods 1 and 5).

Land Use - The perimeter of the WTWRF is 120 ft by 180 ft = 21,600sf.

Construction Phase - Construction activities are to begin during backbone infrastructure of Phase 1 (Neighborhoods 1 and 5).

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

Demolition - Equestrian Facility

Architectural Coating - Most of the WTWRF footprint would not be structures requiring paint. Therefore, one-quarter of the CalEEMod defaults for sqft were used.

Vehicle Trips - ADT obtained from LLG (10 trips per day). $10 \text{ ADT} / 21.6 \text{ 1000sqft} = 0.463 \text{ trips/1000sqft/day}$

Woodstoves -

Energy Use -

Construction Off-road Equipment Mitigation - Tier 4 Engines, level 2 DPF, and 15% oxidation catalyst.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Operational Off-Road Equipment - Two on-site generators would be required (one for the WTWRF and one for the fire pump station).

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	10,800.00	2,700.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	32,400.00	8,100.00
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00

tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblVehicleTrips	ST_TR	1.32	0.46
tblVehicleTrips	SU_TR	0.68	0.46
tblVehicleTrips	WD_TR	6.97	0.46

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					
2016	25.4045	14.1219	10.9725	0.0199	2.2340	0.9461	3.0733	0.4356	0.8704	1.2035	0.0000	1,966.310 2	1,966.310 2	0.3602	0.0000	1,973.873 3
Total	25.4045	14.1219	10.9725	0.0199	2.2340	0.9461	3.0733	0.4356	0.8704	1.2035	0.0000	1,966.310 2	1,966.310 2	0.3602	0.0000	1,973.873 3

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					
2016	25.0657	3.0812	10.1342	0.0199	1.1377	0.0443	1.1820	0.2080	0.0415	0.2425	0.0000	1,966.310 2	1,966.310 2	0.3602	0.0000	1,973.873 3
Total	25.0657	3.0812	10.1342	0.0199	1.1377	0.0443	1.1820	0.2080	0.0415	0.2425	0.0000	1,966.310 2	1,966.310 2	0.3602	0.0000	1,973.873 3

	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
Percent Reduction	1.33	78.18	7.64	0.00	49.07	95.31	61.54	52.25	95.23	79.85	0.00	0.00	0.00	0.00	0.00	0.00

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	0.5996	2.0000e-005	2.2400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.7300e-003	4.7300e-003	1.0000e-005		5.0000e-003
Energy	7.5200e-003	0.0684	0.0575	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003		82.0835	82.0835	1.5700e-003	1.5000e-003	82.5830
Mobile	0.0334	0.0753	0.3485	9.1000e-004	0.0614	1.0600e-003	0.0624	0.0164	9.8000e-004	0.0174		74.2795	74.2795	2.8700e-003		74.3396
Offroad	1.0108	8.2268	7.4944	0.0132		0.5240	0.5240		0.5240	0.5240		1,246.0691	1,246.0691	0.0899		1,247.9570
Total	1.6513	8.3705	7.9026	0.0145	0.0614	0.5303	0.5917	0.0164	0.5302	0.5466		1,402.4368	1,402.4368	0.0944	1.5000e-003	1,404.8846

2.2 Overall Operational

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	0.5996	2.0000e-005	2.2400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.7300e-003	4.7300e-003	1.0000e-005		5.0000e-003
Energy	7.0900e-003	0.0645	0.0541	3.9000e-004		4.9000e-003	4.9000e-003		4.9000e-003	4.9000e-003		77.3423	77.3423	1.4800e-003	1.4200e-003	77.8130
Mobile	0.0334	0.0753	0.3485	9.1000e-004	0.0614	1.0600e-003	0.0624	0.0164	9.8000e-004	0.0174		74.2795	74.2795	2.8700e-003		74.3396
Offroad	1.0108	8.2268	7.4944	0.0132		0.5240	0.5240		0.5240	0.5240		1,246.0691	1,246.0691	0.0899		1,247.9570
Total	1.6509	8.3665	7.8993	0.0145	0.0614	0.5300	0.5914	0.0164	0.5299	0.5463		1,397.6956	1,397.6956	0.0943	1.4200e-003	1,400.1146

	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
Percent Reduction	61.24	98.33	94.88	91.02	0.00	98.87	88.62	0.00	98.89	95.93	0.00	89.19	89.19	95.38	5.33	89.17

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/6/2016	7/19/2016	5	10	
2	Site Preparation	Site Preparation	7/20/2016	7/20/2016	5	1	
3	Grading	Grading	7/21/2016	7/22/2016	5	2	
4	Building Construction	Building Construction	7/23/2016	12/9/2016	5	100	
5	Paving	Paving	12/10/2016	12/16/2016	5	5	
6	Architectural Coating	Architectural Coating	12/17/2016	12/23/2016	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 8,100; Non-Residential Outdoor: 2,700 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	91.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	9.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

3.2 Demolition - 2016

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					1.9933	0.0000	1.9933	0.3019	0.0000	0.3019			0.0000			0.0000
Off-Road	1.3122	11.2385	8.7048	0.0120		0.8039	0.8039		0.7674	0.7674		1,193.6106	1,193.6106	0.2386		1,198.6217
Total	1.3122	11.2385	8.7048	0.0120	1.9933	0.8039	2.7972	0.3019	0.7674	1.0692		1,193.6106	1,193.6106	0.2386		1,198.6217

3.2 Demolition - 2016**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	0.1784	2.5501	1.8204	6.8100e-003	0.1586	0.0348	0.1934	0.0434	0.0321	0.0755		685.8464	685.8464	4.8800e-003		685.9489
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0350	0.0410	0.4474	1.0400e-003	0.0822	6.2000e-004	0.0828	0.0218	5.7000e-004	0.0224		86.8532	86.8532	4.3500e-003		86.9446
Total	0.2133	2.5912	2.2678	7.8500e-003	0.2407	0.0355	0.2762	0.0652	0.0326	0.0978		772.6996	772.6996	9.2300e-003		772.8935

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					0.8970	0.0000	0.8970	0.1358	0.0000	0.1358			0.0000			0.0000
Off-Road	0.1330	0.4900	7.8665	0.0120		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003	0.0000	1,193.6106	1,193.6106	0.2386		1,198.6217
Total	0.1330	0.4900	7.8665	0.0120	0.8970	8.8700e-003	0.9058	0.1358	8.8700e-003	0.1447	0.0000	1,193.6106	1,193.6106	0.2386		1,198.6217

3.2 Demolition - 2016**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	0.1784	2.5501	1.8204	6.8100e-003	0.1586	0.0348	0.1934	0.0434	0.0321	0.0755		685.8464	685.8464	4.8800e-003		685.9489
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0350	0.0410	0.4474	1.0400e-003	0.0822	6.2000e-004	0.0828	0.0218	5.7000e-004	0.0224		86.8532	86.8532	4.3500e-003		86.9446
Total	0.2133	2.5912	2.2678	7.8500e-003	0.2407	0.0355	0.2762	0.0652	0.0326	0.0978		772.6996	772.6996	9.2300e-003		772.8935

3.3 Site Preparation - 2016**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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.3593	13.6350	7.3401	9.3500e-003		0.8338	0.8338		0.7671	0.7671		973.0842	973.0842	0.2935		979.2481
Total	1.3593	13.6350	7.3401	9.3500e-003	0.5303	0.8338	1.3640	0.0573	0.7671	0.8243		973.0842	973.0842	0.2935		979.2481

3.3 Site Preparation - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0175	0.0205	0.2237	5.2000e-004	0.0411	3.1000e-004	0.0414	0.0109	2.8000e-004	0.0112		43.4266	43.4266	2.1800e-003		43.4723
Total	0.0175	0.0205	0.2237	5.2000e-004	0.0411	3.1000e-004	0.0414	0.0109	2.8000e-004	0.0112		43.4266	43.4266	2.1800e-003		43.4723

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					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.1135	0.4180	6.9975	9.3500e-003		7.5600e-003	7.5600e-003		7.5600e-003	7.5600e-003	0.0000	973.0842	973.0842	0.2935		979.2481
Total	0.1135	0.4180	6.9975	9.3500e-003	0.2386	7.5600e-003	0.2462	0.0258	7.5600e-003	0.0333	0.0000	973.0842	973.0842	0.2935		979.2481

3.3 Site Preparation - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0175	0.0205	0.2237	5.2000e-004	0.0411	3.1000e-004	0.0414	0.0109	2.8000e-004	0.0112		43.4266	43.4266	2.1800e-003		43.4723
Total	0.0175	0.0205	0.2237	5.2000e-004	0.0411	3.1000e-004	0.0414	0.0109	2.8000e-004	0.0112		43.4266	43.4266	2.1800e-003		43.4723

3.4 Grading - 2016**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					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	1.3122	11.2385	8.7048	0.0120		0.8039	0.8039		0.7674	0.7674		1,193.6106	1,193.6106	0.2386		1,198.6217
Total	1.3122	11.2385	8.7048	0.0120	0.7528	0.8039	1.5566	0.4138	0.7674	1.1811		1,193.6106	1,193.6106	0.2386		1,198.6217

3.4 Grading - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0350	0.0410	0.4474	1.0400e-003	0.0822	6.2000e-004	0.0828	0.0218	5.7000e-004	0.0224		86.8532	86.8532	4.3500e-003		86.9446
Total	0.0350	0.0410	0.4474	1.0400e-003	0.0822	6.2000e-004	0.0828	0.0218	5.7000e-004	0.0224		86.8532	86.8532	4.3500e-003		86.9446

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					0.3387	0.0000	0.3387	0.1862	0.0000	0.1862			0.0000			0.0000
Off-Road	0.1330	0.4900	7.8665	0.0120		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003	0.0000	1,193.6106	1,193.6106	0.2386		1,198.6217
Total	0.1330	0.4900	7.8665	0.0120	0.3387	8.8700e-003	0.3476	0.1862	8.8700e-003	0.1951	0.0000	1,193.6106	1,193.6106	0.2386		1,198.6217

3.4 Grading - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0350	0.0410	0.4474	1.0400e-003	0.0822	6.2000e-004	0.0828	0.0218	5.7000e-004	0.0224		86.8532	86.8532	4.3500e-003		86.9446
Total	0.0350	0.0410	0.4474	1.0400e-003	0.0822	6.2000e-004	0.0828	0.0218	5.7000e-004	0.0224		86.8532	86.8532	4.3500e-003		86.9446

3.5 Building Construction - 2016**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	1.3816	13.7058	8.2122	0.0113		0.9398	0.9398		0.8646	0.8646		1,178.5549	1,178.5549	0.3555		1,186.0202
Total	1.3816	13.7058	8.2122	0.0113		0.9398	0.9398		0.8646	0.8646		1,178.5549	1,178.5549	0.3555		1,186.0202

3.5 Building Construction - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0417	0.3791	0.4450	9.5000e-004	0.0266	5.7300e-003	0.0323	7.5700e-003	5.2700e-003	0.0129		95.4354	95.4354	7.4000e-004		95.4509
Worker	0.0315	0.0369	0.4026	9.4000e-004	0.0739	5.5000e-004	0.0745	0.0196	5.1000e-004	0.0201		78.1679	78.1679	3.9200e-003		78.2501
Total	0.0732	0.4160	0.8476	1.8900e-003	0.1005	6.2800e-003	0.1068	0.0272	5.7800e-003	0.0330		173.6033	173.6033	4.6600e-003		173.7010

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	0.1389	0.5116	7.6980	0.0113		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003	0.0000	1,178.5549	1,178.5549	0.3555		1,186.0202
Total	0.1389	0.5116	7.6980	0.0113		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003	0.0000	1,178.5549	1,178.5549	0.3555		1,186.0202

3.5 Building Construction - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0417	0.3791	0.4450	9.5000e-004	0.0266	5.7300e-003	0.0323	7.5700e-003	5.2700e-003	0.0129		95.4354	95.4354	7.4000e-004		95.4509
Worker	0.0315	0.0369	0.4026	9.4000e-004	0.0739	5.5000e-004	0.0745	0.0196	5.1000e-004	0.0201		78.1679	78.1679	3.9200e-003		78.2501
Total	0.0732	0.4160	0.8476	1.8900e-003	0.1005	6.2800e-003	0.1068	0.0272	5.7800e-003	0.0330		173.6033	173.6033	4.6600e-003		173.7010

3.6 Paving - 2016**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	1.1203	10.6282	7.2935	0.0111		0.6606	0.6606		0.6113	0.6113		1,083.583 2	1,083.583 2	0.2969		1,089.817 5
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1203	10.6282	7.2935	0.0111		0.6606	0.6606		0.6113	0.6113		1,083.583 2	1,083.583 2	0.2969		1,089.817 5

3.6 Paving - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0629	0.0738	0.8053	1.8700e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		156.3358	156.3358	7.8300e-003		156.5002
Total	0.0629	0.0738	0.8053	1.8700e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		156.3358	156.3358	7.8300e-003		156.5002

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	0.1100	0.4051	6.7829	0.0111		7.3300e-003	7.3300e-003		7.3300e-003	7.3300e-003	0.0000	1,083.5832	1,083.5832	0.2969		1,089.8175
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.1100	0.4051	6.7829	0.0111		7.3300e-003	7.3300e-003		7.3300e-003	7.3300e-003	0.0000	1,083.5832	1,083.5832	0.2969		1,089.8175

3.6 Paving - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0629	0.0738	0.8053	1.8700e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		156.3358	156.3358	7.8300e-003		156.5002
Total	0.0629	0.0738	0.8053	1.8700e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		156.3358	156.3358	7.8300e-003		156.5002

3.7 Architectural Coating - 2016**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	25.0290					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	25.3975	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449

3.7 Architectural Coating - 2016

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	6.9900e-003	8.2000e-003	0.0895	2.1000e-004	0.0164	1.2000e-004	0.0166	4.3600e-003	1.1000e-004	4.4700e-003		17.3706	17.3706	8.7000e-004		17.3889
Total	6.9900e-003	8.2000e-003	0.0895	2.1000e-004	0.0164	1.2000e-004	0.0166	4.3600e-003	1.1000e-004	4.4700e-003		17.3706	17.3706	8.7000e-004		17.3889

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	25.0290					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4481	281.4481	0.0332		282.1449
Total	25.0587	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4481	281.4481	0.0332		282.1449

3.7 Architectural Coating - 2016

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	6.9900e-003	8.2000e-003	0.0895	2.1000e-004	0.0164	1.2000e-004	0.0166	4.3600e-003	1.1000e-004	4.4700e-003		17.3706	17.3706	8.7000e-004		17.3889
Total	6.9900e-003	8.2000e-003	0.0895	2.1000e-004	0.0164	1.2000e-004	0.0166	4.3600e-003	1.1000e-004	4.4700e-003		17.3706	17.3706	8.7000e-004		17.3889

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0334	0.0753	0.3485	9.1000e-004	0.0614	1.0600e-003	0.0624	0.0164	9.8000e-004	0.0174		74.2795	74.2795	2.8700e-003		74.3396
Unmitigated	0.0334	0.0753	0.3485	9.1000e-004	0.0614	1.0600e-003	0.0624	0.0164	9.8000e-004	0.0174		74.2795	74.2795	2.8700e-003		74.3396

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	9.94	9.94	9.94	29,008	29,008
Total	9.94	9.94	9.94	29,008	29,008

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	7.0900e-003	0.0645	0.0541	3.9000e-004		4.9000e-003	4.9000e-003		4.9000e-003	4.9000e-003		77.3423	77.3423	1.4800e-003	1.4200e-003	77.8130
NaturalGas Unmitigated	7.5200e-003	0.0684	0.0575	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003		82.0835	82.0835	1.5700e-003	1.5000e-003	82.5830

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	697.71	7.5200e-003	0.0684	0.0575	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003		82.0835	82.0835	1.5700e-003	1.5000e-003	82.5830
Total		7.5200e-003	0.0684	0.0575	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003		82.0835	82.0835	1.5700e-003	1.5000e-003	82.5830

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.657409	7.0900e-003	0.0645	0.0541	3.9000e-004		4.9000e-003	4.9000e-003		4.9000e-003	4.9000e-003		77.3423	77.3423	1.4800e-003	1.4200e-003	77.8130
Total		7.0900e-003	0.0645	0.0541	3.9000e-004		4.9000e-003	4.9000e-003		4.9000e-003	4.9000e-003		77.3423	77.3423	1.4800e-003	1.4200e-003	77.8130

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	0.5996	2.0000e-005	2.2400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.7300e-003	4.7300e-003	1.0000e-005		5.0000e-003
Unmitigated	0.5996	2.0000e-005	2.2400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.7300e-003	4.7300e-003	1.0000e-005		5.0000e-003

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	0.1372					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4622					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.1000e-004	2.0000e-005	2.2400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.7300e-003	4.7300e-003	1.0000e-005		5.0000e-003
Total	0.5996	2.0000e-005	2.2400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.7300e-003	4.7300e-003	1.0000e-005		5.0000e-003

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	0.1372					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4622					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.1000e-004	2.0000e-005	2.2400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.7300e-003	4.7300e-003	1.0000e-005		5.0000e-003
Total	0.5996	2.0000e-005	2.2400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.7300e-003	4.7300e-003	1.0000e-005		5.0000e-003

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Generator Sets	2	8.00	260	84	0.74	Diesel

UnMitigated/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
Equipment Type	lb/day										lb/day					
Generator Sets	1.0108	8.2268	7.4944	0.0132		0.5240	0.5240		0.5240	0.5240		1,246.0691	1,246.0691	0.0899		1,247.9570
Total	1.0108	8.2268	7.4944	0.0132		0.5240	0.5240		0.5240	0.5240		1,246.0691	1,246.0691	0.0899		1,247.9570

10.0 Vegetation

Valiano - Wastewater Treatment and Water Reclamation Facility (WTWRF)
San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	21.60	1000sqft	0.50	21,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2018
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Concurrent with backbone infrastructure of Phase 1 (neighborhoods 1 and 5).

Land Use - The perimeter of the WTWRF is 120 ft by 180 ft = 21,600sf.

Construction Phase - Construction activities are to begin during backbone infrastructure of Phase 1 (Neighborhoods 1 and 5).

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

Demolition - Equestrian Facility

Architectural Coating - Most of the WTWRF footprint would not be structures requiring paint. Therefore, one-quarter of the CalEEMod defaults for sqft were used.

Vehicle Trips - ADT obtained from LLG (10 trips per day). $10 \text{ ADT} / 21.6 \text{ 1000sqft} = 0.463 \text{ trips/1000sqft/day}$

Woodstoves -

Energy Use -

Construction Off-road Equipment Mitigation - Tier 4 Engines, level 2 DPF, and 15% oxidation catalyst.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Operational Off-Road Equipment - Two on-site generators would be required (one for the WTWRF and one for the fire pump station).

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	10,800.00	2,700.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	32,400.00	8,100.00
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
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tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00

tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblVehicleTrips	ST_TR	1.32	0.46
tblVehicleTrips	SU_TR	0.68	0.46
tblVehicleTrips	WD_TR	6.97	0.46

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					
2016	25.4049	14.1355	11.4911	0.0198	2.2340	0.9462	3.0734	0.4356	0.8705	1.2035	0.0000	1,959.4156	1,959.4156	0.3602	0.0000	1,966.9791
Total	25.4049	14.1355	11.4911	0.0198	2.2340	0.9462	3.0734	0.4356	0.8705	1.2035	0.0000	1,959.4156	1,959.4156	0.3602	0.0000	1,966.9791

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					
2016	25.0661	3.1684	10.6528	0.0198	1.1377	0.0444	1.1821	0.2080	0.0416	0.2426	0.0000	1,959.4156	1,959.4156	0.3602	0.0000	1,966.9791
Total	25.0661	3.1684	10.6528	0.0198	1.1377	0.0444	1.1821	0.2080	0.0416	0.2426	0.0000	1,959.4156	1,959.4156	0.3602	0.0000	1,966.9791

	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
Percent Reduction	1.33	77.59	7.30	0.00	49.07	95.30	61.54	52.25	95.22	79.84	0.00	0.00	0.00	0.00	0.00	0.00

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	0.5996	2.0000e-005	2.2400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.7300e-003	4.7300e-003	1.0000e-005		5.0000e-003
Energy	7.5200e-003	0.0684	0.0575	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003		82.0835	82.0835	1.5700e-003	1.5000e-003	82.5830
Mobile	0.0354	0.0800	0.3641	8.6000e-004	0.0614	1.0700e-003	0.0624	0.0164	9.8000e-004	0.0174		70.7088	70.7088	2.8700e-003		70.7690
Offroad	1.0108	8.2268	7.4944	0.0132		0.5240	0.5240		0.5240	0.5240		1,246.0691	1,246.0691	0.0899		1,247.9570
Total	1.6534	8.3752	7.9182	0.0144	0.0614	0.5303	0.5917	0.0164	0.5302	0.5466		1,398.8661	1,398.8661	0.0944	1.5000e-003	1,401.3140

2.2 Overall Operational

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	0.5996	2.0000e-005	2.2400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.7300e-003	4.7300e-003	1.0000e-005		5.0000e-003
Energy	7.0900e-003	0.0645	0.0541	3.9000e-004		4.9000e-003	4.9000e-003		4.9000e-003	4.9000e-003		77.3423	77.3423	1.4800e-003	1.4200e-003	77.8130
Mobile	0.0354	0.0800	0.3641	8.6000e-004	0.0614	1.0700e-003	0.0624	0.0164	9.8000e-004	0.0174		70.7088	70.7088	2.8700e-003		70.7690
Offroad	1.0108	8.2268	7.4944	0.0132		0.5240	0.5240		0.5240	0.5240		1,246.0691	1,246.0691	0.0899		1,247.9570
Total	1.6529	8.3713	7.9149	0.0144	0.0614	0.5300	0.5914	0.0164	0.5299	0.5463		1,394.1249	1,394.1249	0.0943	1.4200e-003	1,396.5439

	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
Percent Reduction	61.16	98.27	94.69	91.34	0.00	98.87	88.62	0.00	98.89	95.92	0.00	89.42	89.42	95.38	5.33	89.40

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/6/2016	7/19/2016	5	10	
2	Site Preparation	Site Preparation	7/20/2016	7/20/2016	5	1	
3	Grading	Grading	7/21/2016	7/22/2016	5	2	
4	Building Construction	Building Construction	7/23/2016	12/9/2016	5	100	
5	Paving	Paving	12/10/2016	12/16/2016	5	5	
6	Architectural Coating	Architectural Coating	12/17/2016	12/23/2016	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 8,100; Non-Residential Outdoor: 2,700 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	91.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	9.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

3.2 Demolition - 2016

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					1.9933	0.0000	1.9933	0.3019	0.0000	0.3019			0.0000			0.0000
Off-Road	1.3122	11.2385	8.7048	0.0120		0.8039	0.8039		0.7674	0.7674		1,193.6106	1,193.6106	0.2386		1,198.6217
Total	1.3122	11.2385	8.7048	0.0120	1.9933	0.8039	2.7972	0.3019	0.7674	1.0692		1,193.6106	1,193.6106	0.2386		1,198.6217

3.2 Demolition - 2016**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	0.1985	2.6324	2.3517	6.8000e-003	0.1586	0.0349	0.1935	0.0434	0.0321	0.0756		684.2379	684.2379	4.9400e-003		684.3417
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0371	0.0460	0.4346	9.8000e-004	0.0822	6.2000e-004	0.0828	0.0218	5.7000e-004	0.0224		81.5671	81.5671	4.3500e-003		81.6585
Total	0.2356	2.6784	2.7864	7.7800e-003	0.2407	0.0356	0.2763	0.0652	0.0327	0.0979		765.8050	765.8050	9.2900e-003		766.0002

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					0.8970	0.0000	0.8970	0.1358	0.0000	0.1358			0.0000			0.0000
Off-Road	0.1330	0.4900	7.8665	0.0120		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003	0.0000	1,193.6106	1,193.6106	0.2386		1,198.6217
Total	0.1330	0.4900	7.8665	0.0120	0.8970	8.8700e-003	0.9058	0.1358	8.8700e-003	0.1447	0.0000	1,193.6106	1,193.6106	0.2386		1,198.6217

3.2 Demolition - 2016**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	0.1985	2.6324	2.3517	6.8000e-003	0.1586	0.0349	0.1935	0.0434	0.0321	0.0756		684.2379	684.2379	4.9400e-003		684.3417
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0371	0.0460	0.4346	9.8000e-004	0.0822	6.2000e-004	0.0828	0.0218	5.7000e-004	0.0224		81.5671	81.5671	4.3500e-003		81.6585
Total	0.2356	2.6784	2.7864	7.7800e-003	0.2407	0.0356	0.2763	0.0652	0.0327	0.0979		765.8050	765.8050	9.2900e-003		766.0002

3.3 Site Preparation - 2016**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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.3593	13.6350	7.3401	9.3500e-003		0.8338	0.8338		0.7671	0.7671		973.0842	973.0842	0.2935		979.2481
Total	1.3593	13.6350	7.3401	9.3500e-003	0.5303	0.8338	1.3640	0.0573	0.7671	0.8243		973.0842	973.0842	0.2935		979.2481

3.3 Site Preparation - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0185	0.0230	0.2173	4.9000e-004	0.0411	3.1000e-004	0.0414	0.0109	2.8000e-004	0.0112		40.7836	40.7836	2.1800e-003		40.8293
Total	0.0185	0.0230	0.2173	4.9000e-004	0.0411	3.1000e-004	0.0414	0.0109	2.8000e-004	0.0112		40.7836	40.7836	2.1800e-003		40.8293

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					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.1135	0.4180	6.9975	9.3500e-003		7.5600e-003	7.5600e-003		7.5600e-003	7.5600e-003	0.0000	973.0842	973.0842	0.2935		979.2481
Total	0.1135	0.4180	6.9975	9.3500e-003	0.2386	7.5600e-003	0.2462	0.0258	7.5600e-003	0.0333	0.0000	973.0842	973.0842	0.2935		979.2481

3.3 Site Preparation - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0185	0.0230	0.2173	4.9000e-004	0.0411	3.1000e-004	0.0414	0.0109	2.8000e-004	0.0112		40.7836	40.7836	2.1800e-003		40.8293
Total	0.0185	0.0230	0.2173	4.9000e-004	0.0411	3.1000e-004	0.0414	0.0109	2.8000e-004	0.0112		40.7836	40.7836	2.1800e-003		40.8293

3.4 Grading - 2016**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					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	1.3122	11.2385	8.7048	0.0120		0.8039	0.8039		0.7674	0.7674		1,193.6106	1,193.6106	0.2386		1,198.6217
Total	1.3122	11.2385	8.7048	0.0120	0.7528	0.8039	1.5566	0.4138	0.7674	1.1811		1,193.6106	1,193.6106	0.2386		1,198.6217

3.4 Grading - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0371	0.0460	0.4346	9.8000e-004	0.0822	6.2000e-004	0.0828	0.0218	5.7000e-004	0.0224		81.5671	81.5671	4.3500e-003		81.6585
Total	0.0371	0.0460	0.4346	9.8000e-004	0.0822	6.2000e-004	0.0828	0.0218	5.7000e-004	0.0224		81.5671	81.5671	4.3500e-003		81.6585

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					0.3387	0.0000	0.3387	0.1862	0.0000	0.1862			0.0000			0.0000
Off-Road	0.1330	0.4900	7.8665	0.0120		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003	0.0000	1,193.6106	1,193.6106	0.2386		1,198.6217
Total	0.1330	0.4900	7.8665	0.0120	0.3387	8.8700e-003	0.3476	0.1862	8.8700e-003	0.1951	0.0000	1,193.6106	1,193.6106	0.2386		1,198.6217

3.4 Grading - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0371	0.0460	0.4346	9.8000e-004	0.0822	6.2000e-004	0.0828	0.0218	5.7000e-004	0.0224		81.5671	81.5671	4.3500e-003		81.6585
Total	0.0371	0.0460	0.4346	9.8000e-004	0.0822	6.2000e-004	0.0828	0.0218	5.7000e-004	0.0224		81.5671	81.5671	4.3500e-003		81.6585

3.5 Building Construction - 2016**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	1.3816	13.7058	8.2122	0.0113		0.9398	0.9398		0.8646	0.8646		1,178.5549	1,178.5549	0.3555		1,186.0202
Total	1.3816	13.7058	8.2122	0.0113		0.9398	0.9398		0.8646	0.8646		1,178.5549	1,178.5549	0.3555		1,186.0202

3.5 Building Construction - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0483	0.3883	0.5989	9.5000e-004	0.0266	5.7900e-003	0.0323	7.5700e-003	5.3300e-003	0.0129		94.7037	94.7037	7.6000e-004		94.7196
Worker	0.0334	0.0414	0.3912	8.8000e-004	0.0739	5.5000e-004	0.0745	0.0196	5.1000e-004	0.0201		73.4104	73.4104	3.9200e-003		73.4927
Total	0.0816	0.4297	0.9900	1.8300e-003	0.1005	6.3400e-003	0.1068	0.0272	5.8400e-003	0.0330		168.1141	168.1141	4.6800e-003		168.2122

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	0.1389	0.5116	7.6980	0.0113		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003	0.0000	1,178.5549	1,178.5549	0.3555		1,186.0202
Total	0.1389	0.5116	7.6980	0.0113		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003	0.0000	1,178.5549	1,178.5549	0.3555		1,186.0202

3.5 Building Construction - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0483	0.3883	0.5989	9.5000e-004	0.0266	5.7900e-003	0.0323	7.5700e-003	5.3300e-003	0.0129		94.7037	94.7037	7.6000e-004		94.7196
Worker	0.0334	0.0414	0.3912	8.8000e-004	0.0739	5.5000e-004	0.0745	0.0196	5.1000e-004	0.0201		73.4104	73.4104	3.9200e-003		73.4927
Total	0.0816	0.4297	0.9900	1.8300e-003	0.1005	6.3400e-003	0.1068	0.0272	5.8400e-003	0.0330		168.1141	168.1141	4.6800e-003		168.2122

3.6 Paving - 2016**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	1.1203	10.6282	7.2935	0.0111		0.6606	0.6606		0.6113	0.6113		1,083.583 2	1,083.583 2	0.2969		1,089.817 5
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1203	10.6282	7.2935	0.0111		0.6606	0.6606		0.6113	0.6113		1,083.583 2	1,083.583 2	0.2969		1,089.817 5

3.6 Paving - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0667	0.0829	0.7823	1.7600e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		146.8209	146.8209	7.8300e-003		146.9854
Total	0.0667	0.0829	0.7823	1.7600e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		146.8209	146.8209	7.8300e-003		146.9854

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	0.1100	0.4051	6.7829	0.0111		7.3300e-003	7.3300e-003		7.3300e-003	7.3300e-003	0.0000	1,083.5832	1,083.5832	0.2969		1,089.8175
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.1100	0.4051	6.7829	0.0111		7.3300e-003	7.3300e-003		7.3300e-003	7.3300e-003	0.0000	1,083.5832	1,083.5832	0.2969		1,089.8175

3.6 Paving - 2016**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0667	0.0829	0.7823	1.7600e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		146.8209	146.8209	7.8300e-003		146.9854
Total	0.0667	0.0829	0.7823	1.7600e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		146.8209	146.8209	7.8300e-003		146.9854

3.7 Architectural Coating - 2016**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	25.0290					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	25.3975	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449

3.7 Architectural Coating - 2016

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	7.4100e-003	9.2100e-003	0.0869	2.0000e-004	0.0164	1.2000e-004	0.0166	4.3600e-003	1.1000e-004	4.4700e-003		16.3134	16.3134	8.7000e-004		16.3317
Total	7.4100e-003	9.2100e-003	0.0869	2.0000e-004	0.0164	1.2000e-004	0.0166	4.3600e-003	1.1000e-004	4.4700e-003		16.3134	16.3134	8.7000e-004		16.3317

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	25.0290					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4481	281.4481	0.0332		282.1449
Total	25.0587	0.1095	1.8324	2.9700e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	281.4481	281.4481	0.0332		282.1449

3.7 Architectural Coating - 2016

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	7.4100e-003	9.2100e-003	0.0869	2.0000e-004	0.0164	1.2000e-004	0.0166	4.3600e-003	1.1000e-004	4.4700e-003		16.3134	16.3134	8.7000e-004		16.3317
Total	7.4100e-003	9.2100e-003	0.0869	2.0000e-004	0.0164	1.2000e-004	0.0166	4.3600e-003	1.1000e-004	4.4700e-003		16.3134	16.3134	8.7000e-004		16.3317

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0354	0.0800	0.3641	8.6000e-004	0.0614	1.0700e-003	0.0624	0.0164	9.8000e-004	0.0174		70.7088	70.7088	2.8700e-003		70.7690
Unmitigated	0.0354	0.0800	0.3641	8.6000e-004	0.0614	1.0700e-003	0.0624	0.0164	9.8000e-004	0.0174		70.7088	70.7088	2.8700e-003		70.7690

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	9.94	9.94	9.94	29,008	29,008
Total	9.94	9.94	9.94	29,008	29,008

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	7.0900e-003	0.0645	0.0541	3.9000e-004		4.9000e-003	4.9000e-003		4.9000e-003	4.9000e-003		77.3423	77.3423	1.4800e-003	1.4200e-003	77.8130
NaturalGas Unmitigated	7.5200e-003	0.0684	0.0575	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003		82.0835	82.0835	1.5700e-003	1.5000e-003	82.5830

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	697.71	7.5200e-003	0.0684	0.0575	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003		82.0835	82.0835	1.5700e-003	1.5000e-003	82.5830
Total		7.5200e-003	0.0684	0.0575	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003		82.0835	82.0835	1.5700e-003	1.5000e-003	82.5830

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.657409	7.0900e-003	0.0645	0.0541	3.9000e-004		4.9000e-003	4.9000e-003		4.9000e-003	4.9000e-003		77.3423	77.3423	1.4800e-003	1.4200e-003	77.8130
Total		7.0900e-003	0.0645	0.0541	3.9000e-004		4.9000e-003	4.9000e-003		4.9000e-003	4.9000e-003		77.3423	77.3423	1.4800e-003	1.4200e-003	77.8130

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	0.5996	2.0000e-005	2.2400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.7300e-003	4.7300e-003	1.0000e-005		5.0000e-003
Unmitigated	0.5996	2.0000e-005	2.2400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.7300e-003	4.7300e-003	1.0000e-005		5.0000e-003

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	0.1372					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4622					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.1000e-004	2.0000e-005	2.2400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.7300e-003	4.7300e-003	1.0000e-005		5.0000e-003
Total	0.5996	2.0000e-005	2.2400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.7300e-003	4.7300e-003	1.0000e-005		5.0000e-003

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	0.1372					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4622					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.1000e-004	2.0000e-005	2.2400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.7300e-003	4.7300e-003	1.0000e-005		5.0000e-003
Total	0.5996	2.0000e-005	2.2400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.7300e-003	4.7300e-003	1.0000e-005		5.0000e-003

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Generator Sets	2	8.00	260	84	0.74	Diesel

UnMitigated/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
Equipment Type	lb/day										lb/day					
Generator Sets	1.0108	8.2268	7.4944	0.0132		0.5240	0.5240		0.5240	0.5240		1,246.0691	1,246.0691	0.0899		1,247.9570
Total	1.0108	8.2268	7.4944	0.0132		0.5240	0.5240		0.5240	0.5240		1,246.0691	1,246.0691	0.0899		1,247.9570

10.0 Vegetation

Valiano - Wastewater Treatment and Water Reclamation Facility (WTWRF)**San Diego County, Mitigation Report****Construction Mitigation Summary**

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.01	0.95	0.03	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.85	0.93	0.06	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Demolition	0.77	0.77	0.07	0.00	0.95	0.95	0.00	0.00	0.00	0.00	0.00	0.00
Grading	0.88	0.95	0.09	0.00	0.99	0.99	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.86	0.95	0.06	0.00	0.99	0.99	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.90	0.97	0.04	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	Tier 4 Final	1	1	Level 2	15.00
Cement and Mortar Mixers	Diesel	Tier 4 Final	4	4	Level 2	15.00
Concrete/Industrial Saws	Diesel	Tier 4 Final	2	2	Level 2	15.00
Cranes	Diesel	Tier 4 Final	1	1	Level 2	15.00
Forklifts	Diesel	Tier 4 Final	2	2	Level 2	15.00
Graders	Diesel	Tier 4 Final	1	1	Level 2	15.00
Pavers	Diesel	Tier 4 Final	1	1	Level 2	15.00
Rollers	Diesel	Tier 4 Final	1	1	Level 2	15.00
Rubber Tired Dozers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	8	8	Level 2	15.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					
Air Compressors	9.20000E-004	5.93000E-003	4.71000E-003	1.00000E-005	4.90000E-004	4.90000E-004	0.00000E+000	6.38310E-001	6.38310E-001	8.00000E-005	0.00000E+000	6.39890E-001
Cement and Mortar Mixers	4.40000E-004	2.77000E-003	2.31000E-003	1.00000E-005	1.10000E-004	1.10000E-004	0.00000E+000	3.43710E-001	3.43710E-001	4.00000E-005	0.00000E+000	3.44460E-001
Concrete/Industrial Saws	3.88000E-003	2.77300E-002	2.26500E-002	4.00000E-005	2.08000E-003	2.08000E-003	0.00000E+000	3.22594E+000	3.22594E+000	3.10000E-004	0.00000E+000	3.23250E+000
Cranes	1.80000E-002	2.13290E-001	7.46200E-002	1.40000E-004	9.68000E-003	8.90000E-003	0.00000E+000	1.32956E+001	1.32956E+001	4.01000E-003	0.00000E+000	1.33798E+001
Forklifts	1.70200E-002	1.46500E-001	9.47300E-002	1.10000E-004	1.22500E-002	1.12700E-002	0.00000E+000	1.07993E+001	1.07993E+001	3.26000E-003	0.00000E+000	1.08677E+001
Graders	5.10000E-004	5.19000E-003	2.46000E-003	0.00000E+000	2.90000E-004	2.70000E-004	0.00000E+000	2.94570E-001	2.94570E-001	9.00000E-005	0.00000E+000	2.96430E-001
Pavers	8.80000E-004	9.87000E-003	6.24000E-003	1.00000E-005	4.90000E-004	4.50000E-004	0.00000E+000	9.30770E-001	9.30770E-001	2.80000E-004	0.00000E+000	9.36660E-001
Rollers	7.40000E-004	6.81000E-003	4.40000E-003	1.00000E-005	5.00000E-004	4.60000E-004	0.00000E+000	5.40720E-001	5.40720E-001	1.60000E-004	0.00000E+000	5.44150E-001
Rubber Tired Dozers	9.30000E-004	1.04000E-002	7.86000E-003	1.00000E-005	4.80000E-004	4.50000E-004	0.00000E+000	6.28290E-001	6.28290E-001	1.90000E-004	0.00000E+000	6.32270E-001
Tractors/Loaders/Backhoes	3.80400E-002	3.63550E-001	2.69460E-001	3.50000E-004	2.79900E-002	2.57500E-002	0.00000E+000	3.27954E+001	3.27954E+001	9.89000E-003	0.00000E+000	3.30031E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					
Air Compressors	7.00000E-005	2.70000E-004	4.58000E-003	1.00000E-005	0.00000E+000	0.00000E+000	0.00000E+000	6.38310E-001	6.38310E-001	8.00000E-005	0.00000E+000	6.39890E-001
Cement and Mortar Mixers	0.00000E+000	0.00000E+000	0.00000E+000	1.00000E-005	0.00000E+000	0.00000E+000	0.00000E+000	3.43710E-001	3.43710E-001	4.00000E-005	0.00000E+000	3.44460E-001
Concrete/Industrial Saws	3.80000E-004	1.38000E-003	2.31500E-002	4.00000E-005	3.00000E-005	3.00000E-005	0.00000E+000	3.22594E+000	3.22594E+000	3.10000E-004	0.00000E+000	3.23250E+000
Cranes	1.73000E-003	6.39000E-003	6.35800E-002	1.40000E-004	1.20000E-004	1.20000E-004	0.00000E+000	1.32956E+001	1.32956E+001	4.01000E-003	0.00000E+000	1.33798E+001
Forklifts	1.41000E-003	5.20000E-003	8.71200E-002	1.10000E-004	9.00000E-005	9.00000E-005	0.00000E+000	1.07993E+001	1.07993E+001	3.26000E-003	0.00000E+000	1.08677E+001
Graders	4.00000E-005	1.40000E-004	2.33000E-003	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.94570E-001	2.94570E-001	9.00000E-005	0.00000E+000	2.96430E-001
Pavers	1.20000E-004	4.50000E-004	7.49000E-003	1.00000E-005	1.00000E-005	1.00000E-005	0.00000E+000	9.30770E-001	9.30770E-001	2.80000E-004	0.00000E+000	9.36660E-001
Rollers	7.00000E-005	2.60000E-004	4.34000E-003	1.00000E-005	0.00000E+000	0.00000E+000	0.00000E+000	5.40720E-001	5.40720E-001	1.60000E-004	0.00000E+000	5.44150E-001
Rubber Tired Dozers	8.00000E-005	3.00000E-004	2.97000E-003	1.00000E-005	1.00000E-005	1.00000E-005	0.00000E+000	6.28290E-001	6.28290E-001	1.90000E-004	0.00000E+000	6.32270E-001
Tractors/Loaders/Balckhoes	4.24000E-003	1.56200E-002	2.61580E-001	3.50000E-004	2.80000E-004	2.80000E-004	0.00000E+000	3.27953E+001	3.27953E+001	9.89000E-003	0.00000E+000	3.30031E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	9.23913E-001	9.54469E-001	2.76008E-002	0.00000E+000	1.00000E+000	1.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Cement and Mortar Mixers	1.00000E+000	1.00000E+000	1.00000E+000	0.00000E+000	1.00000E+000	1.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Concrete/Industrial Saws	9.02062E-001	9.50234E-001	-2.20751E-002	0.00000E+000	9.85577E-001	9.85577E-001	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Cranes	9.03889E-001	9.70041E-001	1.47950E-001	0.00000E+000	9.87603E-001	9.86517E-001	0.00000E+000	1.50426E-006	1.50426E-006	0.00000E+000	0.00000E+000	1.49479E-006
Forklifts	9.17156E-001	9.64505E-001	8.03336E-002	0.00000E+000	9.92653E-001	9.92014E-001	0.00000E+000	9.25989E-007	9.25989E-007	0.00000E+000	0.00000E+000	1.84032E-006
Graders	9.21569E-001	9.73025E-001	5.28455E-002	0.00000E+000	1.00000E+000	1.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Pavers	8.63636E-001	9.54407E-001	-2.00321E-001	0.00000E+000	9.79592E-001	9.77778E-001	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Rollers	9.05405E-001	9.61821E-001	1.36364E-002	0.00000E+000	1.00000E+000	1.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Rubber Tired Dozers	9.13978E-001	9.71154E-001	6.22137E-001	0.00000E+000	9.79167E-001	9.77778E-001	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Tractors/Loaders/Balckhoes	8.88538E-001	9.57035E-001	2.92437E-002	0.00000E+000	9.89996E-001	9.89126E-001	0.00000E+000	1.21968E-006	1.21968E-006	0.00000E+000	0.00000E+000	1.21201E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input	Mitigation Input	Mitigation Input			
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	0.00		
No	Clean Paved Road	% PM Reduction	0.00				

Phase	Source	Unmitigated		Mitigated		Percent Reduction	
		PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Demolition	Fugitive Dust	0.01	0.00	0.00	0.00	0.55	0.55
Demolition	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Grading	Fugitive Dust	0.00	0.00	0.00	0.00	0.55	0.54
Grading	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.00	0.00	0.00	0.00	0.56	0.67
Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.88	7.88	7.81	7.55	7.88
Hearth	0.00	0.00	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
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	5.84	5.77	5.82	0.00	6.32	6.32	0.00	5.78	5.78	3.85	8.00	5.78
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	20.00	20.00	20.00	20.02	20.15	20.01
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	-0.01	0.13		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network			
No	Neighborhood Enhancements	Provide Traffic Calming Measures			
No	Neighborhood Enhancements	Implement NEV Network	0.00		
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00		
No	Parking Policy Pricing	Limit Parking Supply	0.00		
No	Parking Policy Pricing	Unbundle Parking Costs	0.00		
No	Parking Policy Pricing	On-street Market Pricing	0.00		
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00		
No	Transit Improvements	Provide BRT System	0.00		
No	Transit Improvements	Expand Transit Network	0.00		
No	Transit Improvements	Increase Transit Frequency	0.00		
	Transit Improvements	Transit Improvements Subtotal	0.00		
		Land Use and Site Enhancement Subtotal	0.00		
No	Commute	Implement Trip Reduction Program			
No	Commute	Transit Subsidy			
No	Commute	Implement Employee Parking "Cash Out"			
No	Commute	Workplace Parking Charge			
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00		
No	Commute	Market Commute Trip Reduction Option	0.00		
No	Commute	Employee Vanpool/Shuttle	0.00		2.00
No	Commute	Provide Ride Sharing Program			
	Commute	Commute Subtotal	0.00		

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	250.00
No	Use Low VOC Paint (Residential Exterior)	250.00
No	Use Low VOC Paint (Non-residential Interior)	250.00
No	Use Low VOC Paint (Non-residential Exterior)	250.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	15.00	
Yes	Install High Efficiency Lighting	15.00	
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher	15.00
Fan	50.00
Refrigerator	15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy	0.00	0.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
Yes	Install low-flow bathroom faucet	32.00	
Yes	Install low-flow Kitchen faucet	18.00	
Yes	Install low-flow Toilet	20.00	
Yes	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape	0.00	0.00

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	50.00



Appendix E

CO HOT SPOTS ANALYSIS DATA



Title : San Diego County Subarea Annual CYr 2020 CO Emission Factors
Version : Emfac2011-LDV V2.50.58.094 Sp: Trip Assign San Diego County
Run Date : 2014/04/24 14:11:27
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season : Annual
Area : San Diego

Year: 2020 -- Model Years 1976 to 2020 Inclusive -- Annual
Emfac2011-LDV Emission Factors: V2.50.58.094 Sp: Trip Assign San Diego County

County Average San Diego County Average

Table 1: Running Exhaust Emissions (grams/mile)

Pollutant Name: Carbon Monoxide Temperature: 60F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
3	2.313	3.228	4.623	24.723	13.629	27.287	3.331
4	2.243	3.133	4.523	24.723	13.629	27.287	3.250
5	2.177	3.043	4.428	24.723	13.629	27.287	3.174
6	2.115	2.958	4.237	22.690	12.416	26.272	3.059
7	2.056	2.877	4.061	20.870	11.338	25.340	2.953
8	2.001	2.800	3.899	19.237	10.378	24.482	2.854
9	1.948	2.727	3.749	17.771	9.522	23.694	2.762
10	1.899	2.658	3.611	16.452	8.757	22.969	2.676
11	1.852	2.592	3.482	15.265	8.072	22.303	2.595
12	1.807	2.530	3.363	14.194	7.458	21.692	2.520
13	1.764	2.470	3.252	13.227	6.908	21.132	2.449
14	1.723	2.413	3.148	12.352	6.413	20.619	2.383
15	1.684	2.358	3.052	11.561	5.967	20.151	2.320
16	1.647	2.305	2.961	10.845	5.565	19.725	2.261
17	1.612	2.255	2.876	10.195	5.203	19.338	2.205
18	1.578	2.207	2.796	9.606	4.875	18.989	2.152
19	1.545	2.161	2.721	9.070	4.579	18.675	2.102
20	1.514	2.117	2.651	8.586	4.311	18.395	2.055
21	1.484	2.075	2.584	8.145	4.068	18.148	2.011
22	1.456	2.034	2.522	7.744	3.848	17.933	1.968
23	1.428	1.995	2.462	7.378	3.648	17.747	1.928
24	1.402	1.957	2.406	7.046	3.467	17.592	1.890
25	1.376	1.921	2.353	6.743	3.302	17.466	1.853
26	1.352	1.886	2.303	6.467	3.153	17.368	1.819
27	1.328	1.852	2.256	6.216	3.017	17.300	1.786
28	1.306	1.820	2.210	5.987	2.894	17.259	1.755
29	1.284	1.789	2.168	5.780	2.783	17.247	1.725
30	1.263	1.759	2.127	5.592	2.682	17.265	1.697
31	1.243	1.731	2.088	5.423	2.590	17.311	1.671
32	1.223	1.703	2.052	5.269	2.508	17.387	1.646
33	1.205	1.676	2.017	5.132	2.434	17.495	1.622
34	1.187	1.651	1.984	5.009	2.367	17.634	1.599
35	1.169	1.626	1.953	4.899	2.308	17.806	1.578
36	1.153	1.602	1.923	4.803	2.255	18.012	1.558
37	1.137	1.580	1.896	4.718	2.209	18.255	1.539
38	1.122	1.558	1.869	4.645	2.169	18.535	1.522
39	1.107	1.537	1.844	4.584	2.134	18.856	1.505
40	1.093	1.517	1.821	4.533	2.105	19.220	1.490

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: BARHAM DR AND TWIN OAKS VALLEY RD AMWP
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)	*	EF	H	W
	*	X1 Y1 X2 Y2	* TYPE	(G/MI)	(M)	(M)
A. NF	*	2 -450 2 -150	* AG	1420	1.7	10.5
B. NA	*	2 -150 2 0	* AG	1350	3.1	9.9
C. ND	*	2 0 2 150	* AG	1721	2.2	9.9
D. NE	*	2 150 2 450	* AG	1721	1.7	10.5
E. SF	*	-2 450 -2 150	* AG	2744	1.7	10.5
F. SA	*	-2 150 -2 0	* AG	2114	3.1	9.9
G. SD	*	-2 0 -2 -150	* AG	1740	2.2	9.9
H. SE	*	-2 -150 -2 -450	* AG	1740	1.7	10.5
I. WF	*	450 2 150 2	* AG	1364	1.7	10.5
J. WA	*	150 2 0 2	* AG	1124	3.3	9.9
K. WD	*	0 2 -150 2	* AG	1538	3.3	9.9
L. WE	*	-150 2 -450 2	* AG	1538	1.7	10.5
M. EF	*	-450 -2 -150 -2	* AG	712	1.7	10.5
N. EA	*	-150 -2 0 -2	* AG	371	3.2	9.9
O. ED	*	0 -2 150 -2	* AG	1241	3.3	9.9
P. EE	*	150 -2 450 -2	* AG	1241	1.7	10.5
Q. NL	*	0 0 2 -150	* AG	70	2.3	9.9
R. SL	*	0 0 -2 150	* AG	630	2.5	9.9
S. WL	*	0 0 150 2	* AG	240	2.9	9.9
T. EL	*	0 0 -150 -2	* AG	341	3.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M)
	*	X Y Z
1. NE3	*	8 8 1.8
2. SE3	*	8 -8 1.8
3. SW3	*	-8 -8 1.8
4. NW3	*	-8 8 1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	* PRED CONC (PPM)	*	A	B	C	D	E	F	G	H
1. NE3	*	265.	* 2.1	*	.0	.0	.3	.0	.0	.3	.0	.0
2. SE3	*	354.	* 2.2	*	.0	.1	.7	.0	.0	.6	.0	.0
3. SW3	*	5.	* 2.3	*	.0	.0	.3	.0	.0	1.1	.1	.0
4. NW3	*	95.	* 2.2	*	.0	.0	.2	.0	.0	.5	.0	.0

RECEPTOR	*	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	*	.0	.0	.9	.0	.0	.1	.0	.0	.0	.0	.0	.2
2. SE3	*	.0	.2	.0	.0	.0	.0	.3	.0	.0	.2	.0	.0
3. SW3	*	.0	.0	.3	.0	.0	.0	.0	.0	.0	.2	.0	.0
4. NW3	*	.0	.7	.1	.0	.0	.0	.4	.0	.0	.0	.1	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: BARHAM DR AND TWIN OAKS VALLEY RD PMWP
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)	*	EF	H	W
	*	X1 Y1 X2 Y2	* TYPE	(G/MI)	(M)	(M)
A. NF	*	2 -450 2 -150	* AG	2195	1.7	10.5
B. NA	*	2 -150 2 0	* AG	2120	3.3	9.9
C. ND	*	2 0 2 150	* AG	3155	2.5	9.9
D. NE	*	2 150 2 450	* AG	3155	1.7	10.5
E. SF	*	-2 450 -2 150	* AG	2282	1.7	10.5
F. SA	*	-2 150 -2 0	* AG	1842	3.3	9.9
G. SD	*	-2 0 -2 -150	* AG	1600	2.5	9.9
H. SE	*	-2 -150 -2 -450	* AG	1600	1.7	10.5
I. WF	*	450 2 150 2	* AG	1342	1.7	10.5
J. WA	*	150 2 0 2	* AG	1052	3.3	9.9
K. WD	*	0 2 -150 2	* AG	1199	3.3	9.9
L. WE	*	-150 2 -450 2	* AG	1199	1.7	10.5
M. EF	*	-450 -2 -150 -2	* AG	1740	1.7	10.5
N. EA	*	-150 -2 0 -2	* AG	795	3.3	9.9
O. ED	*	0 -2 150 -2	* AG	1605	3.3	9.9
P. EE	*	150 -2 450 -2	* AG	1605	1.7	10.5
Q. NL	*	0 0 2 -150	* AG	75	2.5	9.9
R. SL	*	0 0 -2 150	* AG	440	2.5	9.9
S. WL	*	0 0 150 2	* AG	290	2.8	9.9
T. EL	*	0 0 -150 -2	* AG	945	3.3	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M)
	*	X Y Z
1. NE3	*	8 8 1.8
2. SE3	*	8 -8 1.8
3. SW3	*	-8 -8 1.8
4. NW3	*	-8 8 1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	* PRED CONC (PPM)	*	A	B	C	D	E	F	G	H
1. NE3	*	264.	* 2.6	*	.0	.0	.6	.0	.0	.3	.0	.0
2. SE3	*	355.	* 2.9	*	.0	.2	1.3	.0	.1	.5	.0	.0
3. SW3	*	5.	* 2.7	*	.0	.0	.6	.1	.0	1.1	.1	.0
4. NW3	*	95.	* 2.4	*	.0	.0	.4	.0	.0	.4	.0	.0

RECEPTOR	*	CONC/LINK (PPM)	*	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	*	.0	*	.1	.7	.0	.0	.3	.0	.0	.0	.0	.0	.0	.4
2. SE3	*	.0	*	.2	.0	.0	.0	.0	.4	.0	.0	.0	.2	.0	.0
3. SW3	*	.0	*	.0	.2	.0	.0	.2	.0	.0	.0	.2	.0	.0	.2
4. NW3	*	.0	*	.7	.1	.0	.0	.0	.4	.0	.0	.0	.1	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: AUTO PKWY AND MISSION AVE AMWP
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* *	LINK X1	COORDINATES (M) Y1	X2	Y2	* * TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	*	2	-450	2	-150	* AG	1385	1.7	.0	10.5
B. NA	*	2	-150	2	0	* AG	933	3.2	.0	9.9
C. ND	*	2	0	2	150	* AG	1404	2.4	.0	9.9
D. NE	*	2	150	2	450	* AG	1404	1.7	.0	10.5
E. SF	*	-2	450	-2	150	* AG	1544	1.7	.0	10.5
F. SA	*	-2	150	-2	0	* AG	1194	3.3	.0	9.9
G. SD	*	-2	0	-2	-150	* AG	1221	2.4	.0	9.9
H. SE	*	-2	-150	-2	-450	* AG	1221	1.7	.0	10.5
I. WF	*	450	2	150	2	* AG	934	1.7	.0	10.5
J. WA	*	150	2	0	2	* AG	830	3.3	.0	9.9
K. WD	*	0	2	-150	2	* AG	1382	3.3	.0	9.9
L. WE	*	-150	2	-450	2	* AG	1382	1.7	.0	10.5
M. EF	*	-450	-2	-150	-2	* AG	973	1.7	.0	10.5
N. EA	*	-150	-2	0	-2	* AG	633	3.3	.0	9.9
O. ED	*	0	-2	150	-2	* AG	829	3.2	.0	9.9
P. EE	*	150	-2	450	-2	* AG	829	1.7	.0	10.5
Q. NL	*	0	0	2	-150	* AG	452	2.5	.0	9.9
R. SL	*	0	0	-2	150	* AG	350	2.5	.0	9.9
S. WL	*	0	0	150	2	* AG	104	2.8	.0	9.9
T. EL	*	0	0	-150	-2	* AG	340	2.9	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* *	COORDINATES (M) X	Y	Z
1. NE3	*	8	8	1.8
2. SE3	*	8	-8	1.8
3. SW3	*	-8	-8	1.8
4. NW3	*	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* *	BRG (DEG)	* *	PRED CONC (PPM)	* *	A	B	C	D	E	F	G	H
1. NE3	*	265.	*	1.9	*	.0	.0	.2	.0	.0	.2	.0	.0
2. SE3	*	355.	*	1.7	*	.0	.0	.6	.0	.0	.4	.0	.0
3. SW3	*	5.	*	1.8	*	.0	.0	.3	.0	.0	.7	.0	.0
4. NW3	*	175.	*	1.7	*	.0	.3	.0	.0	.0	.1	.6	.0

RECEPTOR	* *	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	*	.0	.0	.8	.0	.0	.2	.0	.0	.0	.0	.0	.1
2. SE3	*	.0	.1	.0	.0	.0	.0	.2	.0	.0	.1	.0	.0
3. SW3	*	.0	.0	.2	.0	.0	.1	.0	.0	.0	.1	.0	.0
4. NW3	*	.0	.0	.3	.0	.0	.1	.0	.0	.2	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: AUTO PKWY AND MISSION AVE PMWP
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK X1	COORDINATES (M) Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	*	2	-450	2	-150	*	AG	1673	1.7	.0	10.5
B. NA	*	2	-150	2	0	*	AG	1176	3.3	.0	9.9
C. ND	*	2	0	2	150	*	AG	1993	2.8	.0	9.9
D. NE	*	2	150	2	450	*	AG	1993	1.7	.0	10.5
E. SF	*	-2	450	-2	150	*	AG	1253	1.7	.0	10.5
F. SA	*	-2	150	-2	0	*	AG	1103	3.3	.0	9.9
G. SD	*	-2	0	-2	-150	*	AG	1244	2.8	.0	9.9
H. SE	*	-2	-150	-2	-450	*	AG	1244	1.7	.0	10.5
I. WF	*	450	2	150	2	*	AG	900	1.7	.0	10.5
J. WA	*	150	2	0	2	*	AG	860	3.3	.0	9.9
K. WD	*	0	2	-150	2	*	AG	1287	3.2	.0	9.9
L. WE	*	-150	2	-450	2	*	AG	1287	1.7	.0	10.5
M. EF	*	-450	-2	-150	-2	*	AG	1711	1.7	.0	10.5
N. EA	*	-150	-2	0	-2	*	AG	1261	3.3	.0	9.9
O. ED	*	0	-2	150	-2	*	AG	1013	3.2	.0	9.9
P. EE	*	150	-2	450	-2	*	AG	1013	1.7	.0	10.5
Q. NL	*	0	0	2	-150	*	AG	497	2.7	.0	9.9
R. SL	*	0	0	-2	150	*	AG	150	2.5	.0	9.9
S. WL	*	0	0	150	2	*	AG	40	2.6	.0	9.9
T. EL	*	0	0	-150	-2	*	AG	450	2.9	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. NE3	*	8	8	1.8
2. SE3	*	8	-8	1.8
3. SW3	*	-8	-8	1.8
4. NW3	*	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	PRED CONC (PPM)	*	A	B	C	D	E	F	G	H
1. NE3	*	265.	2.1	*	.0	.0	.4	.0	.0	.2	.0	.0
2. SE3	*	275.	2.1	*	.0	.3	.0	.0	.0	.0	.2	.0
3. SW3	*	5.	2.0	*	.0	.0	.4	.0	.0	.7	.0	.0
4. NW3	*	175.	2.0	*	.0	.4	.0	.0	.0	.0	.7	.0

RECEPTOR	*	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	*	.0	.0	.8	.0	.0	.4	.0	.0	.0	.0	.0	.2
2. SE3	*	.0	.0	.4	.0	.0	.8	.0	.0	.0	.0	.0	.2
3. SW3	*	.0	.0	.2	.0	.0	.3	.0	.0	.0	.0	.0	.0
4. NW3	*	.0	.0	.3	.0	.0	.2	.0	.0	.2	.0	.0	.0

JOB: VALLEY PKWY AND 9TH AVE AMWP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

```

      U=      .5 M/S      Z0= 100. CM      ALT=      0. (M)
      BRG= WORST CASE      VD=   .0 CM/S
      CLAS=   7 (G)      VS=   .0 CM/S
      MIXH= 1000. M      AMB=   .0 PPM
      SIGTH=   5. DEGREES      TEMP= 15.6 DEGREE (C)

```

LINK		*	LINK COORDINATES (M)				*		EF	H	W	
DESCRIPTION		*	X1	Y1	X2	Y2	*	TYPE	VPH	(G/MI)	(M)	(M)
		*					*					
A.	NF	*	2	-450	2	-150	*	AG	941	1.7	.0	10.5
B.	NA	*	2	-150	2	0	*	AG	921	3.0	.0	9.9
C.	ND	*	2	0	2	150	*	AG	1211	2.2	.0	9.9
D.	NE	*	2	150	2	450	*	AG	1211	1.7	.0	10.5
E.	SF	*	-2	450	-2	150	*	AG	1459	1.7	.0	10.5
F.	SA	*	-2	150	-2	0	*	AG	1339	3.2	.0	9.9
G.	SD	*	-2	0	-2	-150	*	AG	1240	2.2	.0	9.9
H.	SE	*	-2	-150	-2	-450	*	AG	1240	1.7	.0	10.5
I.	WF	*	450	2	150	2	*	AG	725	1.7	.0	10.5
J.	WA	*	150	2	0	2	*	AG	570	3.3	.0	9.9
K.	WD	*	0	2	-150	2	*	AG	614	2.7	.0	9.9
L.	WE	*	-150	2	-450	2	*	AG	614	1.7	.0	10.5
M.	EF	*	-450	-2	-150	-2	*	AG	566	1.7	.0	10.5
N.	EA	*	-150	-2	0	-2	*	AG	333	2.9	.0	9.9
O.	ED	*	0	-2	150	-2	*	AG	626	2.7	.0	9.9
P.	EE	*	150	-2	450	-2	*	AG	626	1.7	.0	10.5
Q.	NL	*	0	0	2	-150	*	AG	20	2.3	.0	9.9
R.	SL	*	0	0	-2	150	*	AG	120	2.3	.0	9.9
S.	WL	*	0	0	150	2	*	AG	155	2.9	.0	9.9
T.	EL	*	0	0	-150	-2	*	AG	233	2.9	.0	9.9

RECEPTOR	*	COORDINATES (M)		
	*	X	Y	Z
1. NE3	*	8	8	1.8
2. SE3	*	8	-8	1.8
3. SW3	*	-8	-8	1.8
4. NW3	*	-8	8	1.8

[illegible]

JOB: VALLEY PKWY AND 9TH AVE PMWP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

```

      U=      .5 M/S      Z0= 100. CM      ALT=      0. (M)
      BRG= WORST CASE      VD=   .0 CM/S
      CLAS=   7 (G)      VS=   .0 CM/S
      MIXH= 1000. M      AMB=   .0 PPM
      SIGTH=   5. DEGREES      TEMP= 15.6 DEGREE (C)

```

LINK		*	LINK COORDINATES (M)				*		EF	H	W	
DESCRIPTION		*	X1	Y1	X2	Y2	*	TYPE	VPH	(G/MI)	(M)	(M)
		*					*					
A.	NF	*	2	-450	2	-150	*	AG	1096	1.7	.0	10.5
B.	NA	*	2	-150	2	0	*	AG	1066	3.3	.0	9.9
C.	ND	*	2	0	2	150	*	AG	1225	2.3	.0	9.9
D.	NE	*	2	150	2	450	*	AG	1225	1.7	.0	10.5
E.	SF	*	-2	450	-2	150	*	AG	1350	1.7	.0	10.5
F.	SA	*	-2	150	-2	0	*	AG	1210	3.3	.0	9.9
G.	SD	*	-2	0	-2	-150	*	AG	1250	2.3	.0	9.9
H.	SE	*	-2	-150	-2	-450	*	AG	1250	1.7	.0	10.5
I.	WF	*	450	2	150	2	*	AG	613	1.7	.0	10.5
J.	WA	*	150	2	0	2	*	AG	377	3.1	.0	9.9
K.	WD	*	0	2	-150	2	*	AG	513	2.3	.0	9.9
L.	WE	*	-150	2	-450	2	*	AG	513	1.7	.0	10.5
M.	EF	*	-450	-2	-150	-2	*	AG	758	1.7	.0	10.5
N.	EA	*	-150	-2	0	-2	*	AG	462	3.3	.0	9.9
O.	ED	*	0	-2	150	-2	*	AG	829	3.3	.0	9.9
P.	EE	*	150	-2	450	-2	*	AG	829	1.7	.0	10.5
Q.	NL	*	0	0	2	-150	*	AG	30	2.3	.0	9.9
R.	SL	*	0	0	-2	150	*	AG	140	2.3	.0	9.9
S.	WL	*	0	0	150	2	*	AG	236	2.9	.0	9.9
T.	EL	*	0	0	-150	-2	*	AG	296	2.9	.0	9.9

RECEPTOR	*	COORDINATES (M)		
	*	X	Y	Z
1. NE3	*	8	8	1.8
2. SE3	*	8	-8	1.8
3. SW3	*	-8	-8	1.8
4. NW3	*	-8	8	1.8

[illegible]

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: VALLEY PKWY AND I-15 SB RAMPS AMWP
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* *	LINK COORDINATES (M)	* *	EF (G/MI)	H (M)	W (M)
		X1 Y1 X2 Y2	TYPE VPH			
A. NF	*	2 -450 2 -150	* AG 161	1.7	.0	10.5
B. NA	*	2 -150 2 0	* AG 130	2.9	.0	9.9
C. ND	*	2 0 2 150	* AG 423	2.1	.0	9.9
D. NE	*	2 150 2 450	* AG 423	1.7	.0	10.5
E. SF	*	-2 450 -2 150	* AG 1085	1.7	.0	10.5
F. SA	*	-2 150 -2 0	* AG 732	3.3	.0	9.9
G. SD	*	-2 0 -2 -150	* AG 223	2.0	.0	9.9
H. SE	*	-2 -150 -2 -450	* AG 223	1.7	.0	10.5
I. WF	*	450 2 150 2	* AG 1318	1.7	.0	10.5
J. WA	*	150 2 0 2	* AG 1228	3.3	.0	9.9
K. WD	*	0 2 -150 2	* AG 1641	2.3	.0	9.9
L. WE	*	-150 2 -450 2	* AG 1641	1.7	.0	10.5
M. EF	*	-450 -2 -150 -2	* AG 925	1.7	.0	10.5
N. EA	*	-150 -2 0 -2	* AG 812	2.8	.0	9.9
O. ED	*	0 -2 150 -2	* AG 1202	2.3	.0	9.9
P. EE	*	150 -2 450 -2	* AG 1202	1.7	.0	10.5
Q. NL	*	0 0 2 -150	* AG 31	2.9	.0	9.9
R. SL	*	0 0 -2 150	* AG 353	3.1	.0	9.9
S. WL	*	0 0 150 2	* AG 90	2.3	.0	9.9
T. EL	*	0 0 -150 -2	* AG 113	2.3	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* *	COORDINATES (M)
		X Y Z
1. NE3	*	8 8 1.8
2. SE3	*	8 -8 1.8
3. SW3	*	-8 -8 1.8
4. NW3	*	-8 8 1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* *	BRG (DEG)	* *	PRED CONC (PPM)	* *	A	B	C	D	E	F	G	H
1. NE3	*	265.	*	1.4	*	.0	.0	.0	.0	.0	.1	.0	.0
2. SE3	*	354.	*	1.1	*	.0	.0	.2	.0	.0	.3	.0	.0
3. SW3	*	85.	*	1.2	*	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	*	95.	*	1.6	*	.0	.0	.0	.0	.0	.2	.0	.0

RECEPTOR	* *	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	*	.0	.1	.7	.0	.0	.2	.0	.0	.0	.0	.0	.0
2. SE3	*	.0	.2	.0	.0	.0	.0	.2	.0	.0	.2	.0	.0
3. SW3	*	.0	.4	.0	.0	.0	.0	.5	.0	.0	.0	.0	.0
4. NW3	*	.0	.8	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: VALLEY PKWY AND I-15 SB RAMPS PMWP
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* *	LINK COORDINATES (M)	* *	EF (G/MI)	H (M)	W (M)
		X1 Y1 X2 Y2	TYPE VPH			
A. NF	*	2 -450 2 -150	* AG 433	1.7	.0	10.5
B. NA	*	2 -150 2 0	* AG 400	3.3	.0	9.9
C. ND	*	2 0 2 150	* AG 582	3.3	.0	9.9
D. NE	*	2 150 2 450	* AG 582	1.7	.0	10.5
E. SF	*	-2 450 -2 150	* AG 797	1.7	.0	10.5
F. SA	*	-2 150 -2 0	* AG 536	3.3	.0	9.9
G. SD	*	-2 0 -2 -150	* AG 501	2.9	.0	9.9
H. SE	*	-2 -150 -2 -450	* AG 501	1.7	.0	10.5
I. WF	*	450 2 150 2	* AG 1413	1.7	.0	10.5
J. WA	*	150 2 0 2	* AG 1143	3.0	.0	9.9
K. WD	*	0 2 -150 2	* AG 1192	2.0	.0	9.9
L. WE	*	-150 2 -450 2	* AG 1192	1.7	.0	10.5
M. EF	*	-450 -2 -150 -2	* AG 1828	1.7	.0	10.5
N. EA	*	-150 -2 0 -2	* AG 1726	3.0	.0	9.9
O. ED	*	0 -2 150 -2	* AG 2196	2.0	.0	9.9
P. EE	*	150 -2 450 -2	* AG 2196	1.7	.0	10.5
Q. NL	*	0 0 2 -150	* AG 33	3.0	.0	9.9
R. SL	*	0 0 -2 150	* AG 261	3.1	.0	9.9
S. WL	*	0 0 150 2	* AG 270	2.3	.0	9.9
T. EL	*	0 0 -150 -2	* AG 102	2.2	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* *	COORDINATES (M)
		X Y Z
1. NE3	*	8 8 1.8
2. SE3	*	8 -8 1.8
3. SW3	*	-8 -8 1.8
4. NW3	*	-8 8 1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* *	BRG (DEG)	* *	PRED CONC (PPM)	* *	A	B	C	D	E	F	G	H
1. NE3	*	265.	*	1.4	*	.0	.0	.1	.0	.0	.0	.0	.0
2. SE3	*	275.	*	1.6	*	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	*	85.	*	1.6	*	.0	.0	.0	.0	.0	.0	.1	.0
4. NW3	*	95.	*	1.6	*	.0	.0	.1	.0	.0	.1	.0	.0

RECEPTOR	* *	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	*	.0	.0	.4	.0	.0	.4	.0	.0	.0	.0	.0	.0
2. SE3	*	.0	.0	.2	.0	.0	.9	.1	.0	.0	.0	.0	.0
3. SW3	*	.0	.3	.0	.0	.0	.1	.7	.0	.0	.0	.0	.0
4. NW3	*	.0	.7	.0	.0	.0	.0	.3	.1	.0	.0	.1	.0



Appendix F

CONSTRUCTION SCREENING DPM HEALTH RISK ASSESSMENT DATA



Screening HRA Heath Risk Inputs and Calculations for Project-related Construction DPM

1 24 hrs/24 hrs

*assume all PM10 exhaust is DPM

*assumption is that emissions are constant over the acres disturbed

Emission Calcs	
1.776999303	Highest Unmitigated CalEEMod Exhaust PM10 emissions in Lbs/day
453.6	grams/pound
3600	seconds/hour
24	hours/day
100.00	percent of day
365.25	days/yr
2.55421E-05	grams/second

Area Calcs	
90	Max area disturbed (acres)
4046.825	meters ² /acre
364214.25	meters ²
603.501657	meters x meters

Screen 3 assumptions

1.5 m receptor height

3.0 m stack height

use discrete distances as well as array from 0 to 5,000 m rural setting

7.01293E-11 SCREEN3 Emission Rate
grams/second*meter²

0.00000000007 value inserted in SCREEN3 model

0.3048 conversion factor from ft to m		SCREEN3 Distances
ft	m	
10.00	3.05	receptor 1
328.08	100.00	receptor 2
984.25	300.00	receptor 3
1,312.34	400.00	receptor 4
1,640.42	500.00	receptor 5
1,968.50	600.00	receptor 6
1,564.96	477.00	highest concentration

* project boundary

* 100 meter (328 ft) from project boundary

* 300 meter (984 ft) from project boundary

* 400 meter (1,312 ft) from project boundary

* 500 meter (1,640 ft) from project boundary

* 600 meter (1,968ft) from project boundary

* highest receptor location

0.3048 conversion factor from ft to m

Highest Concentration (329 m)			
HRA Calcs			
0.00582	SCREEN3 1-hour concentration (micrograms/meter3)	Value obtained from SCREEN3 output file	
0.1	1-hour --> annual conversion	From June 2007 BAAQMD PERMIT MODELING GUIDANCE, pg. 4	
5.82E-04	SCREEN3 annual concentration (micrograms/meter3)		
7.15E-09	Calculated dose (mg/kg-day)		
0.008 Cancer risk (per million)			
0.01164 Hazard Index			
5 Chronic inhalation REL (micrograms/meter3)			
365 days of construction			
1.000 (% of day)			
260	Exposure frequency (EF)	days/year	# of construction days
4	Exposure duration (ED)	Years	# of days/365
25550	Averaging time (AT)	days	
302	Daily breathing rate (DBR)	L/kg body weight	
1	Inhalation absorption factor (A)	None	
1.00E-03	Micrograms to milligrams conversion	1 microgram	
1.00E-03	liters to cubic meters conversion	liters	
1.1	Cancer potency factor	mg/kg-day	
1.00E+06	risk per million people	None	
Project Boundary			
10 feet (3m)			
HRA Calcs			
0.00338	SCREEN3 1-hour concentration (micrograms/meter3)	Value obtained from SCREEN3 output file	
0.1	1-hour --> 24-hr conversion		
3.38E-04	SCREEN3 24-hour concentration (micrograms/meter3)		
4.16E-09	Calculated dose (mg/kg-day)		
0.005 Cancer risk (per million)			
0.00677 Hazard Index			
328 feet (100m)			
HRA Calcs			
0.00399	SCREEN3 1-hour concentration (micrograms/meter3)	Value obtained from SCREEN3 output file	
0.1	1-hour --> 24-hr conversion		
3.99E-04	SCREEN3 24-hour concentration (micrograms/meter3)		
4.90E-09	Calculated dose (mg/kg-day)		
0.005 Cancer risk (per million)			
0.00798 Hazard Index			

984 feet (300m)		
	HRA Calcs	
0.00507	SCREEN3 1-hour concentration (micrograms/meter3)	Value obtained from SCREEN3 output file
	0.1 1-hour --> 24-hr conversion	
	5.07E-04 SCREEN3 24-hour concentration (micrograms/meter3)	
	6.24E-09 Calculated dose (mg/kg-day)	
0.007 Cancer risk (per million)		
0.01015 Hazard Index		

1,312 feet (400m)		
	HRA Calcs	
0.00553	SCREEN3 1-hour concentration (micrograms/meter3)	Value obtained from SCREEN3 output file
	0.1 1-hour --> 24-hr conversion	
	5.53E-04 SCREEN3 24-hour concentration (micrograms/meter3)	
	6.80E-09 Calculated dose (mg/kg-day)	
0.007 Cancer risk (per million)		
0.01106 Hazard Index		

1,640 feet (500m)		
	HRA Calcs	
0.00577	SCREEN3 1-hour concentration (micrograms/meter3)	Value obtained from SCREEN3 output file
	0.1 1-hour --> 24-hr conversion	
	5.77E-04 SCREEN3 24-hour concentration (micrograms/meter3)	
	7.09E-09 Calculated dose (mg/kg-day)	
0.008 Cancer risk (per million)		
0.01154 Hazard Index		

1,968 feet (600m)		
	HRA Calcs	
0.00506	SCREEN3 1-hour concentration (micrograms/meter3)	Value obtained from SCREEN3 output file
	0.1 1-hour --> 24-hr conversion	
	5.06E-04 SCREEN3 24-hour concentration (micrograms/meter3)	
	6.22E-09 Calculated dose (mg/kg-day)	
0.007 Cancer risk (per million)		
0.01012 Hazard Index		

03/09/15

09:09:45

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

C:\Users\Victor0\Desktop\IPQ11-Valiano.scr

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = AREA
EMISSION RATE (G/(S-M**2)) = 0.701293E-10
SOURCE HEIGHT (M) = 3.0000
LENGTH OF LARGER SIDE (M) = 604.0000
LENGTH OF SMALLER SIDE (M) = 603.0000
RECEPTOR HEIGHT (M) = 0.0000
URBAN/RURAL OPTION = RURAL

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION

BUOY. FLUX = 0.000 M**4/S**3; MOM. FLUX = 0.000 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING
DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	MAX DIR (DEG)
3.	0.3383E-02	6	1.0	1.0	10000.0	3.00	45.
100.	0.3990E-02	6	1.0	1.0	10000.0	3.00	45.
200.	0.4551E-02	6	1.0	1.0	10000.0	3.00	43.
300.	0.5073E-02	6	1.0	1.0	10000.0	3.00	45.
400.	0.5530E-02	6	1.0	1.0	10000.0	3.00	45.
500.	0.5768E-02	6	1.0	1.0	10000.0	3.00	45.
600.	0.5059E-02	6	1.0	1.0	10000.0	3.00	45.

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 3. M:

477.	0.5820E-02	6	1.0	1.0	10000.0	3.00	45.
------	------------	---	-----	-----	---------	------	-----

*** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	0.5820E-02	477.	0.

** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **



Appendix G

WTWRF SCREENING TAC HEALTH RISK ASSESSMENT DATA



VOC Emissions from Influent Treatment

Peak Daily Influent Flow (gal/day)	190,660
Average Influent Flow (gal/day)	76,020
Conversion Factor from µg/L and MGD to lb/yr	3.04
Annual x/Q from SCREEN3 modeling (1-hour x/Q x 0.1)	27.09
Max 24-hr x/Q (1-hr x/Q * 0.4)	108.4

Compound	Risk Assessment Averaging Period	Toxic Influent Concentration (µg/L)	Peak Daily Emissions (lbs/day)	Annual Average Emissions (lbs/year)	Emission Rate (g/s)	Annual Average Ambient Concs.		24-Hr Average Ambient Concs.		Carcinogenic Risk		Non-Cancer Risk			
						SCREEN3 Dispersion factor (ug/m3) / (g/s)	Annual Ambient Conc. (µg/m3)	SCREEN3 Dispersion factor (ug/m3) / (g/s)	24-hr Ambient Conc. (µg/m3)	Unit Risk Factors (µg/m3 ⁻¹)	Cancer Risk	Chronic Inhalation REL	Chronic Non-Cancer Risk	Acute Inhalation REL	24-hr (Acute) Non-Cancer Risk
Ammonia	Annual, 24-hr	299.5	4.76485E-05	0.0069344	5.51487E-10	27.09	1.49E-07	108.4	5.98E-08	0	-	200	2.99E-10	3200	1.87E-11
Benzene	Annual, 24-hr	0.58	9.22742E-08	1.343E-05	1.06799E-12	27.09	2.89E-10	108.4	1.16E-10	2.90E-05	3.49E-09	60	1.93E-12	1300	8.90E-14
Chloroform	Annual, 24-hr	8.1	1.28866E-06	0.0001875	1.4915E-11	27.09	4.04E-09	108.3	1.62E-09	5.30E-06	9.27E-09	300	5.39E-12	150	1.08E-11
Ethyl Benzene	Annual	2.25	3.5796E-07	5.21E-05	4.14306E-12	27.08	1.12E-09	108.3	4.49E-10	2.50E-06	1.18E-09	2000	2.24E-13	-	-
Hydrogen Sulfide	Annual, 24-hr	19.5	3.10232E-06	0.0004515	3.59065E-11	27.09	9.73E-09	108.3	3.89E-09	0	-	10	3.89E-10	42	9.26E-11
1,1,1-TCA	Annual	2.65	4.21598E-07	6.136E-05	4.8796E-12	27.09	1.32E-09	108.4	5.29E-10	0	-	1000	5.29E-13	68000	7.78E-15
Methylene Chlorine	Annual, 24-hr	7.8	1.24093E-06	0.0001806	1.43626E-11	27.08	3.89E-09	108.3	1.56E-09	1.00E-06	1.64E-09	400	3.89E-12	14000	1.11E-13
1,4-Dichlorobenzene	Annual	4.65	7.39785E-07	0.0001077	8.56232E-12	27.08	2.32E-09	108.3	9.28E-10	1.10E-05	1.12E-08	800	1.16E-12	-	-
Phenol	Annual, 24-hr	9.8	1.55912E-06	0.0002269	1.80453E-11	27.09	4.89E-09	108.3	1.96E-09	0	-	200	9.78E-12	5800	3.37E-13
Styrene	Annual, 24-hr	5	7.95467E-07	0.0001158	9.2068E-12	27.09	2.49E-09	108.4	9.98E-10	0	-	900	1.11E-12	21000	4.75E-14
Toluene	Annual, 24-hr	4.9	7.79558E-07	0.0001135	9.02266E-12	27.09	2.44E-09	108.3	9.78E-10	0	-	300	3.26E-12	37000	2.64E-14
TCE	Annual	2.6	4.13643E-07	6.02E-05	4.78754E-12	27.09	1.30E-09	108.4	5.19E-10	2.00E-06	1.10E-09	600	8.65E-13	-	-
Xylene	Annual, 24-hr	5.86	9.32288E-07	0.0001357	1.07904E-11	27.09	2.92E-09	108.4	1.17E-09	0	-	700	1.67E-12	22000	5.31E-14
			5.93721E-05	0.0086406							2.79E-08		7.18E-10		1.23E-10

Daily Emissions (lb/day) = peak daily influent flow (gal/day) x liquid conversion factor (3.785 L/gal) x toxic influent concentration (µg/L) x unit conversion factor (10⁻⁶ g/µg) x lb/453.6 g

Sources: Emission factors from SJVAPCD's Fugitive Air Emission Factors and (ug/L) Concentration Values for Wastewater Treatment Plants (POTWS) November 1993.
 OEHHA Revised Air Toxics Hot Spots Program Technical Support Document for Unit Risk and Cancer Potency Values Updated 2011. <http://oehha.ca.gov/air/hotspots/2009/AppendixA.pdf>
 OEHHA Acute and Chronic Reference Exposure Levels (RELs) as of August 2013. <http://oehha.ca.gov/air/allrel/html>

Notes: Assumed hydrogen sulfide would be controlled to 90% efficiency with scrubbers or biofilters that are part of the odor control system.
 Cancer risk less than 10 in a million is considered less than significant.
 Chronic and acute non-cancer risks less than 1 are considered less than significant.

Compounds	Cancer Potency Factor	Calculated dose (mg/kg-day)
Ammonia	-	-
Benzene	1.00E-01	3.49E-14
Chloroform	1.90E-02	4.88E-13
Ethyl Benzene	8.70E-03	1.36E-13
Hydrogen Sulfide	-	-
1,1,1-TCA	-	-
Methylene Chlorine	3.50E-03	4.70E-13
1,4-Dichlorobenzene	4.00E-02	2.80E-13
Phenol	-	-
Styrene	-	-
Toluene	-	-
TCE	7.00E-03	1.57E-13
Xylene	-	-

Values	Variables
365	Exposure frequency (EF)
70	Exposure duration (ED)
25550	Averaging time (AT)
302	Daily breathing rate (DBR)
1	Inhalation absorption factor (A)
1.00E-03	Micrograms to milligrams conversion
1.00E-03	liters to cubic meters conversion
3.02E-04	Calculated exposure duration period
1.00E+06	risk per million people

Table 1 Parameters Used in HARP Dispersion Modeling

Modeling Parameter	Values Used in Model
Emisison rate	1 grams per second
1-hour average to annual average persistence factor	0.1
Stack height	12.8 meters (42 feet)
Stack diameter	0.91 meters (3 feet)
Stack exit velocity	3.66 meters per second (10 feet per second)
Stack gas exit temperature	294.3 Kelvin
Land use	Rural



Appendix H

OFF-SITE PIPELINE EMISSION CALCULATIONS DATA



Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Valiano - Sewer Option: Harmony Grove				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	3.0	16.0	26.9	2.1	1.4	0.7	1.4	1.3	0.1	3,057.3
Grading/Excavation	10.7	53.2	108.6	6.3	5.6	0.7	5.2	5.1	0.1	10,969.4
Drainage/Utilities/Sub-Grade	6.5	31.9	56.0	4.1	3.4	0.7	3.2	3.1	0.1	6,140.7
Paving	3.4	17.9	26.9	1.8	1.8	-	1.7	1.7	-	3,234.2
Maximum (pounds/day)	10.7	53.2	108.6	6.3	5.6	0.7	5.2	5.1	0.1	10,969.4
Total (tons/construction project)	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	23.3
Notes:										
Project Start Year ->	2016									
Project Length (months) ->	0									
Total Project Area (acres) ->	0									
Maximum Area Disturbed/Day (acres) ->	0									
Total Soil Imported/Exported (yd³/day)->	0									
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.										
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.										

Emission Estimates for -> Valiano - Sewer Option: Harmony Grove				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	
Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	1.4	7.3	12.2	1.0	0.6	0.3	0.7	0.6	0.1	1,389.7
Grading/Excavation	4.9	24.2	49.4	2.9	2.5	0.3	2.4	2.3	0.1	4,986.1
Drainage/Utilities/Sub-Grade	2.9	14.5	25.4	1.8	1.5	0.3	1.5	1.4	0.1	2,791.2
Paving	1.5	8.2	12.2	0.8	0.8	-	0.8	0.8	-	1,470.1
Maximum (kilograms/day)	4.9	24.2	49.4	2.9	2.5	0.3	2.4	2.3	0.1	4,986.1
Total (megagrams/construction project)	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	21.1
Notes:										
Project Start Year ->	2016									
Project Length (months) ->	0									
Total Project Area (hectares) ->	0									
Maximum Area Disturbed/Day (hectares) ->	0									
Total Soil Imported/Exported (meters³/day)->	0									
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.										
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.										

Road Construction Emissions Model

Version 7.1.5.1

Data Entry Worksheet

Note: Required data input sections have a yellow background.

Optional data input sections have a blue background. Only areas with a

yellow or blue background can be modified. Program defaults have a white background.

The user is required to enter information in cells C10 through C25.



Input Type

Project Name	Valiano - Sewer Option: Harmony Grove
Construction Start Year	2016
Project Type	2
Project Construction Time	0.28
Predominant Soil/Site Type: Enter 1, 2, or 3	2
Project Length	0.97
Total Project Area	0.35
Maximum Area Disturbed/Day	0.07
Water Trucks Used?	1
Soil Imported	0.00
Soil Exported	0.00
Average Truck Capacity	20

Enter a Year between 2009 and 2025 (inclusive)

1 New Road Construction
2 Road Widening
3 Bridge/Overpass Construction

months

1. Sand Gravel
2. Weathered Rock-Earth
3. Blasted Rock

miles

acres

acres

1. Yes
2. No

yd³/day

yd³/day

yd³ (assume 20 if unknown)

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months
Grubbing/Land Clearing		0.03
Grading/Excavation		0.13
Drainage/Utilities/Sub-Grade		0.08
Paving		0.04
Totals	0.00	0.28

2005	%	2006	%	2007	%
0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions							
User Input	User Override of						
	Soil Hauling Defaults		Default Values				
	Miles/round trip		30				
	Round trips/day		0				
	Vehicle miles traveled/day (calculated)		0				
Hauling Emissions		ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)		0.16	8.25	0.70	0.17	0.10	1679.86
Emission rate (grams/trip)		0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day		0.00	0.00	0.00	0.00	0.00	0.00
Tons per construction period		0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions						
	User Override of Worker					
	Commute Default Values		Default Values			
	Miles/ one-way trip		20			
	One-way trips/day		2			
No. of employees: Grubbing/Land Clearing			6			
No. of employees: Grading/Excavation			21			
No. of employees: Drainage/Utilities/Sub-Grade			15			
No. of employees: Paving			11			
	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Grading/Excavation (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Paving (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Grubbing/Land Clearing (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Grading/Excavation (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Paving (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Pounds per day - Grubbing/Land Clearing	0.095	0.116	1.076	0.026	0.011	246.933
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.000	0.000	0.000	0.076
Pounds per day - Grading/Excavation	0.323	0.394	3.658	0.088	0.037	839.571
Tons per const. Period - Grading/Excavation	0.000	0.001	0.005	0.000	0.000	1.164
Pounds per day - Drainage/Utilities/Sub-Grade	0.228	0.278	2.582	0.062	0.026	592.638
Tons per const. Period - Drain/Util/Sub-Grade	0.000	0.000	0.002	0.000	0.000	0.548
Pounds per day - Paving	0.171	0.208	1.937	0.047	0.020	444.479
Tons per const. Period - Paving	0.000	0.000	0.001	0.000	0.000	0.205
tons per construction period	0.001	0.001	0.009	0.000	0.000	1.993

Water truck default values can be overridden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day		
Grubbing/Land Clearing - Exhaust		1		40		
Grading/Excavation - Exhaust		1		40		
Drainage/Utilities/Subgrade		1		40		
	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Emission rate - Grading/Excavation (grams/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Pounds per day - Grubbing/Land Clearing	0.01	0.73	0.06	0.01	0.01	148.00
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	0.05
Pound per day - Grading/Excavation	0.01	0.73	0.06	0.01	0.01	148.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.21
Pound per day - Drainage/Utilities/Subgrade	0.01	0.73	0.06	0.01	0.01	148.00
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.00	0.00	0.00	0.00	0.14

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0.07	0.7	0.0	0.1	0.0
Fugitive Dust - Grading/Excavation		0.07	0.7	0.0	0.1	0.0
Fugitive Dust - Drainage/Utilities/Subgrade		0.07	0.7	0.0	0.1	0.0

Off-Road Equipment Emissions								
Grubbing/Land Clearing	Default	Type	ROG	CO	NOx	PM10	PM2.5	CO2
	Number of Vehicles		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
Override of Default Number of Vehicles	Program-estimate							
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.74	4.47	9.52	0.37	0.34	824.89
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	2	Excavators	0.82	5.58	8.93	0.44	0.40	1145.73
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Signal Boards	0.73	2.73	2.64	0.19	0.18	314.87
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Trenchers	0.59	2.10	4.94	0.39	0.36	376.85
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	2.9	14.9	26.0	1.4	1.3	2662.3
	Grubbing/Land Clearing	tons per phase	0.0	0.0	0.0	0.0	0.0	0.8

Grading/Excavation		Default	ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles		Number of Vehicles	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	Program-estimate	Type						
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.74	4.47	9.52	0.37	0.34	824.89
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Excavators	1.23	8.37	13.40	0.66	0.61	1718.59
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	2	Graders	2.13	6.96	20.76	1.17	1.07	1342.05
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.70	3.02	6.18	0.46	0.42	559.07
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Loaders	0.52	3.12	6.51	0.22	0.20	662.62
	2	Scrapers	2.91	14.51	35.39	1.43	1.31	3216.04
	2	Signal Boards	0.73	2.73	2.64	0.19	0.18	314.87
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	4	Tractors/Loaders/Backhoes	1.43	6.29	13.08	1.01	0.93	1343.70
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	10.4	49.5	107.5	5.5	5.1	9981.8
	Grading	tons per phase	0.0	0.1	0.1	0.0	0.0	13.8

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles <i>Program-estimate</i>		ROG	CO	NOx	PM10	PM2.5	CO2
			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Air Compressors	0.68	3.42	4.38	0.37	0.34	507.95
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Generator Sets	0.51	2.98	3.86	0.27	0.25	487.07
	1	Graders	1.07	3.48	10.38	0.58	0.54	671.02
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pumps	0.44	2.47	3.19	0.23	0.22	396.14
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rough Terrain Forklifts	0.22	2.03	2.73	0.15	0.14	372.74
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	1	Scrapers	1.46	7.25	17.70	0.71	0.66	1608.02
	2	Signal Boards	0.73	2.73	2.64	0.19	0.18	314.87
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	3	Tractors/Loaders/Backhoes	1.07	4.72	9.81	0.76	0.69	1007.77
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	6.2	29.3	54.9	3.3	3.0	5400.0
	Drainage	tons per phase	0.0	0.0	0.1	0.0	0.0	5.0

Paving	Default		ROG	CO	NOx	PM10	PM2.5	CO2
	Number of Vehicles							
	Override of Default Number of Vehicles	Type						
	Program-estimate		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pavers	0.42	2.84	4.49	0.22	0.21	481.68
	1	Paving Equipment	0.32	2.69	3.53	0.18	0.16	426.30
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.70	3.02	6.18	0.46	0.42	559.07
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Signal Boards	0.73	2.73	2.64	0.19	0.18	314.87
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	3	Tractors/Loaders/Backhoes	1.07	4.72	9.81	0.76	0.69	1007.77
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	3.2	16.0	26.6	1.8	1.7	2789.7
	Paving	tons per phase	0.0	0.0	0.0	0.0	0.0	1.3
Total Emissions all Phases (tons per construction period) =>			0.0	0.1	0.2	0.0	0.0	20.9

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment		Default Values Horsepower		Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		106		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		10		8
Concrete/Industrial Saws		64		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		142		8
Excavators		163		8
Forklifts		89		8
Generator Sets		66		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		26		8
Pumps		53		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		20		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		45		8

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Emission Estimates for -> Valiano - Sewer Option: HARRF				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	3.0	16.0	26.9	2.1	1.4	0.7	1.4	1.3	0.1	3,057.3
Grading/Excavation	10.7	53.2	108.6	6.3	5.6	0.7	5.2	5.1	0.1	10,969.4
Drainage/Utilities/Sub-Grade	6.5	31.9	56.0	4.1	3.4	0.7	3.2	3.1	0.1	6,140.7
Paving	3.4	17.9	26.9	1.8	1.8	-	1.7	1.7	-	3,234.2
Maximum (pounds/day)	10.7	53.2	108.6	6.3	5.6	0.7	5.2	5.1	0.1	10,969.4
Total (tons/construction project)	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	20.0
Notes:										
Project Start Year ->	2016									
Project Length (months) ->	0									
Total Project Area (acres) ->	0									
Maximum Area Disturbed/Day (acres) ->	0									
Total Soil Imported/Exported (yd³/day)->	0									
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.										
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.										

Emission Estimates for -> Valiano - Sewer Option: HARRF				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	
Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	1.4	7.3	12.2	1.0	0.6	0.3	0.7	0.6	0.1	1,389.7
Grading/Excavation	4.9	24.2	49.4	2.9	2.5	0.3	2.4	2.3	0.1	4,986.1
Drainage/Utilities/Sub-Grade	2.9	14.5	25.4	1.8	1.5	0.3	1.5	1.4	0.1	2,791.2
Paving	1.5	8.2	12.2	0.8	0.8	-	0.8	0.8	-	1,470.1
Maximum (kilograms/day)	4.9	24.2	49.4	2.9	2.5	0.3	2.4	2.3	0.1	4,986.1
Total (megagrams/construction project)	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	18.1
Notes:										
Project Start Year ->	2016									
Project Length (months) ->	0									
Total Project Area (hectares) ->	0									
Maximum Area Disturbed/Day (hectares) ->	0									
Total Soil Imported/Exported (meters³/day)->	0									
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.										
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.										

Road Construction Emissions Model

Version 7.1.5.1

Data Entry Worksheet

Note: Required data input sections have a yellow background.

Optional data input sections have a blue background. Only areas with a

yellow or blue background can be modified. Program defaults have a white background.

The user is required to enter information in cells C10 through C25.



Input Type

Project Name	Valiano - Sewer Option: HARRF	
Construction Start Year	2016	Enter a Year between 2009 and 2025 (inclusive)
Project Type	2	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	0.24	months
Predominant Soil/Site Type: Enter 1, 2, or 3	2	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	0.86	miles
Total Project Area	0.31	acres
Maximum Area Disturbed/Day	0.07	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.00	yd ³ /day
Soil Exported	0.00	yd ³ /day
Average Truck Capacity	20	yd ³ (assume 20 if unknown)

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months
Grubbing/Land Clearing		0.02
Grading/Excavation		0.11
Drainage/Utilities/Sub-Grade		0.07
Paving		0.04
Totals	0.00	0.24

2005	%	2006	%	2007	%
0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions							
User Input	User Override of						
	Soil Hauling Defaults		Default Values				
	Miles/round trip		30				
	Round trips/day		0				
	Vehicle miles traveled/day (calculated)		0				
Hauling Emissions		ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)		0.16	8.25	0.70	0.17	0.10	1679.86
Emission rate (grams/trip)		0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day		0.00	0.00	0.00	0.00	0.00	0.00
Tons per construction period		0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions						
	User Override of Worker					
	Commute Default Values		Default Values			
	Miles/ one-way trip		20			
	One-way trips/day		2			
No. of employees: Grubbing/Land Clearing			6			
No. of employees: Grading/Excavation			21			
No. of employees: Drainage/Utilities/Sub-Grade			15			
No. of employees: Paving			11			
	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Grading/Excavation (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Paving (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Grubbing/Land Clearing (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Grading/Excavation (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Paving (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Pounds per day - Grubbing/Land Clearing	0.095	0.116	1.076	0.026	0.011	246.933
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.000	0.000	0.000	0.065
Pounds per day - Grading/Excavation	0.323	0.394	3.658	0.088	0.037	839.571
Tons per const. Period - Grading/Excavation	0.000	0.000	0.004	0.000	0.000	0.997
Pounds per day - Drainage/Utilities/Sub-Grade	0.228	0.278	2.582	0.062	0.026	592.638
Tons per const. Period - Drain/Util/Sub-Grade	0.000	0.000	0.002	0.000	0.000	0.469
Pounds per day - Paving	0.171	0.208	1.937	0.047	0.020	444.479
Tons per const. Period - Paving	0.000	0.000	0.001	0.000	0.000	0.176
tons per construction period	0.001	0.001	0.007	0.000	0.000	1.708

Water truck default values can be overridden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day		
Grubbing/Land Clearing - Exhaust		1		40		
Grading/Excavation - Exhaust		1		40		
Drainage/Utilities/Subgrade		1		40		
	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Emission rate - Grading/Excavation (grams/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Pounds per day - Grubbing/Land Clearing	0.01	0.73	0.06	0.01	0.01	148.00
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	0.04
Pound per day - Grading/Excavation	0.01	0.73	0.06	0.01	0.01	148.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.18
Pound per day - Drainage/Utilities/Subgrade	0.01	0.73	0.06	0.01	0.01	148.00
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.00	0.00	0.00	0.00	0.12

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0.07	0.7	0.0	0.1	0.0
Fugitive Dust - Grading/Excavation		0.07	0.7	0.0	0.1	0.0
Fugitive Dust - Drainage/Utilities/Subgrade		0.07	0.7	0.0	0.1	0.0

Off-Road Equipment Emissions								
Grubbing/Land Clearing	Default	Type	ROG	CO	NOx	PM10	PM2.5	CO2
	Number of Vehicles		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
Override of Default Number of Vehicles	Program-estimate							
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.74	4.47	9.52	0.37	0.34	824.89
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	2	Excavators	0.82	5.58	8.93	0.44	0.40	1145.73
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Signal Boards	0.73	2.73	2.64	0.19	0.18	314.87
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Trenchers	0.59	2.10	4.94	0.39	0.36	376.85
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	2.9	14.9	26.0	1.4	1.3	2662.3
	Grubbing/Land Clearing	tons per phase	0.0	0.0	0.0	0.0	0.0	0.7

Grading/Excavation		Default	ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles		Number of Vehicles	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	Program-estimate	Type						
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.74	4.47	9.52	0.37	0.34	824.89
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Excavators	1.23	8.37	13.40	0.66	0.61	1718.59
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	2	Graders	2.13	6.96	20.76	1.17	1.07	1342.05
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.70	3.02	6.18	0.46	0.42	559.07
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Loaders	0.52	3.12	6.51	0.22	0.20	662.62
	2	Scrapers	2.91	14.51	35.39	1.43	1.31	3216.04
	2	Signal Boards	0.73	2.73	2.64	0.19	0.18	314.87
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	4	Tractors/Loaders/Backhoes	1.43	6.29	13.08	1.01	0.93	1343.70
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	10.4	49.5	107.5	5.5	5.1	9981.8
	Grading	tons per phase	0.0	0.1	0.1	0.0	0.0	11.9

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles <i>Program-estimate</i>		ROG	CO	NOx	PM10	PM2.5	CO2
			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Air Compressors	0.68	3.42	4.38	0.37	0.34	507.95
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Generator Sets	0.51	2.98	3.86	0.27	0.25	487.07
	1	Graders	1.07	3.48	10.38	0.58	0.54	671.02
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pumps	0.44	2.47	3.19	0.23	0.22	396.14
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rough Terrain Forklifts	0.22	2.03	2.73	0.15	0.14	372.74
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	1	Scrapers	1.46	7.25	17.70	0.71	0.66	1608.02
	2	Signal Boards	0.73	2.73	2.64	0.19	0.18	314.87
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	3	Tractors/Loaders/Backhoes	1.07	4.72	9.81	0.76	0.69	1007.77
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	6.2	29.3	54.9	3.3	3.0	5400.0
	Drainage	tons per phase	0.0	0.0	0.0	0.0	0.0	4.3

Paving	Default		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
	Override of Default Number of Vehicles	Number of Vehicles Program-estimate Type						
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pavers	0.42	2.84	4.49	0.22	0.21	481.68
	1	Paving Equipment	0.32	2.69	3.53	0.18	0.16	426.30
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.70	3.02	6.18	0.46	0.42	559.07
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Signal Boards	0.73	2.73	2.64	0.19	0.18	314.87
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	3	Tractors/Loaders/Backhoes	1.07	4.72	9.81	0.76	0.69	1007.77
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	3.2	16.0	26.6	1.8	1.7	2789.7
	Paving	tons per phase	0.0	0.0	0.0	0.0	0.0	1.1
Total Emissions all Phases (tons per construction period) =>			0.0	0.1	0.2	0.0	0.0	17.9

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment		Default Values Horsepower		Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		106		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		10		8
Concrete/Industrial Saws		64		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		142		8
Excavators		163		8
Forklifts		89		8
Generator Sets		66		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		26		8
Pumps		53		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		20		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		45		8

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Emission Estimates for -> Valiano - Sewer Option: Vallecitos				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	3.0	16.0	26.9	2.1	1.4	0.7	1.4	1.3	0.1	3,057.3
Grading/Excavation	10.7	53.2	108.6	6.3	5.6	0.7	5.2	5.1	0.1	10,969.4
Drainage/Utilities/Sub-Grade	6.5	31.9	56.0	4.1	3.4	0.7	3.2	3.1	0.1	6,140.7
Paving	3.4	17.9	26.9	1.8	1.8	-	1.7	1.7	-	3,234.2
Maximum (pounds/day)	10.7	53.2	108.6	6.3	5.6	0.7	5.2	5.1	0.1	10,969.4
Total (tons/construction project)	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	15.8
Notes: Project Start Year -> 2016										
Project Length (months) -> 0										
Total Project Area (acres) -> 0										
Maximum Area Disturbed/Day (acres) -> 0										
Total Soil Imported/Exported (yd³/day)-> 0										
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.										
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.										
Emission Estimates for -> Valiano - Sewer Option: Vallecitos				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	
Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	1.4	7.3	12.2	1.0	0.6	0.3	0.7	0.6	0.1	1,389.7
Grading/Excavation	4.9	24.2	49.4	2.9	2.5	0.3	2.4	2.3	0.1	4,986.1
Drainage/Utilities/Sub-Grade	2.9	14.5	25.4	1.8	1.5	0.3	1.5	1.4	0.1	2,791.2
Paving	1.5	8.2	12.2	0.8	0.8	-	0.8	0.8	-	1,470.1
Maximum (kilograms/day)	4.9	24.2	49.4	2.9	2.5	0.3	2.4	2.3	0.1	4,986.1
Total (megagrams/construction project)	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	14.3
Notes: Project Start Year -> 2016										
Project Length (months) -> 0										
Total Project Area (hectares) -> 0										
Maximum Area Disturbed/Day (hectares) -> 0										
Total Soil Imported/Exported (meters³/day)-> 0										
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.										
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.										

Road Construction Emissions Model

Version 7.1.5.1

Data Entry Worksheet

Note: Required data input sections have a yellow background.

Optional data input sections have a blue background. Only areas with a

yellow or blue background can be modified. Program defaults have a white background.

The user is required to enter information in cells C10 through C25.



Input Type

Project Name	Valiano - Sewer Option: Vallecitos
Construction Start Year	2016
Project Type	2
Project Construction Time	0.19
Predominant Soil/Site Type: Enter 1, 2, or 3	2
Project Length	0.65
Total Project Area	0.24
Maximum Area Disturbed/Day	0.07
Water Trucks Used?	1
Soil Imported	0.00
Soil Exported	0.00
Average Truck Capacity	20

Enter a Year between 2009 and 2025 (inclusive)

1 New Road Construction
2 Road Widening
3 Bridge/Overpass Construction

months

1. Sand Gravel
2. Weathered Rock-Earth
3. Blasted Rock

miles

acres

acres

1. Yes
2. No

yd³/day

yd³/day

yd³ (assume 20 if unknown)

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months
Grubbing/Land Clearing		0.02
Grading/Excavation		0.09
Drainage/Utilities/Sub-Grade		0.06
Paving		0.03
Totals	0.00	0.19

2005	%	2006	%	2007	%
0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions							
User Input	User Override of						
	Soil Hauling Defaults		Default Values				
	Miles/round trip		30				
	Round trips/day		0				
	Vehicle miles traveled/day (calculated)		0				
Hauling Emissions		ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)		0.16	8.25	0.70	0.17	0.10	1679.86
Emission rate (grams/trip)		0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day		0.00	0.00	0.00	0.00	0.00	0.00
Tons per construction period		0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions						
	User Override of Worker					
	Commute Default Values		Default Values			
	Miles/ one-way trip		20			
	One-way trips/day		2			
No. of employees: Grubbing/Land Clearing			6			
No. of employees: Grading/Excavation			21			
No. of employees: Drainage/Utilities/Sub-Grade			15			
No. of employees: Paving			11			
	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Grading/Excavation (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Paving (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Grubbing/Land Clearing (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Grading/Excavation (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Paving (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Pounds per day - Grubbing/Land Clearing	0.095	0.116	1.076	0.026	0.011	246.933
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.000	0.000	0.000	0.052
Pounds per day - Grading/Excavation	0.323	0.394	3.658	0.088	0.037	839.571
Tons per const. Period - Grading/Excavation	0.000	0.000	0.003	0.000	0.000	0.790
Pounds per day - Drainage/Utilities/Sub-Grade	0.228	0.278	2.582	0.062	0.026	592.638
Tons per const. Period - Drain/Util/Sub-Grade	0.000	0.000	0.002	0.000	0.000	0.372
Pounds per day - Paving	0.171	0.208	1.937	0.047	0.020	444.479
Tons per const. Period - Paving	0.000	0.000	0.001	0.000	0.000	0.139
tons per construction period	0.001	0.001	0.006	0.000	0.000	1.352

Water truck default values can be overridden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day		
Grubbing/Land Clearing - Exhaust		1		40		
Grading/Excavation - Exhaust		1		40		
Drainage/Utilities/Subgrade		1		40		
	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Emission rate - Grading/Excavation (grams/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Pounds per day - Grubbing/Land Clearing	0.01	0.73	0.06	0.01	0.01	148.00
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	0.03
Pound per day - Grading/Excavation	0.01	0.73	0.06	0.01	0.01	148.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.14
Pound per day - Drainage/Utilities/Subgrade	0.01	0.73	0.06	0.01	0.01	148.00
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.00	0.00	0.00	0.00	0.09

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0.07	0.7	0.0	0.1	0.0
Fugitive Dust - Grading/Excavation		0.07	0.7	0.0	0.1	0.0
Fugitive Dust - Drainage/Utilities/Subgrade		0.07	0.7	0.0	0.1	0.0

Off-Road Equipment Emissions								
Grubbing/Land Clearing	Default	Type	ROG	CO	NOx	PM10	PM2.5	CO2
	Number of Vehicles		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
Override of Default Number of Vehicles	Program-estimate							
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.74	4.47	9.52	0.37	0.34	824.89
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	2	Excavators	0.82	5.58	8.93	0.44	0.40	1145.73
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Signal Boards	0.73	2.73	2.64	0.19	0.18	314.87
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Trenchers	0.59	2.10	4.94	0.39	0.36	376.85
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	2.9	14.9	26.0	1.4	1.3	2662.3
	Grubbing/Land Clearing	tons per phase	0.0	0.0	0.0	0.0	0.0	0.6

Grading/Excavation		Default	ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles		Number of Vehicles	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	Program-estimate	Type						
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.74	4.47	9.52	0.37	0.34	824.89
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Excavators	1.23	8.37	13.40	0.66	0.61	1718.59
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	2	Graders	2.13	6.96	20.76	1.17	1.07	1342.05
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.70	3.02	6.18	0.46	0.42	559.07
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Loaders	0.52	3.12	6.51	0.22	0.20	662.62
	2	Scrapers	2.91	14.51	35.39	1.43	1.31	3216.04
	2	Signal Boards	0.73	2.73	2.64	0.19	0.18	314.87
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	4	Tractors/Loaders/Backhoes	1.43	6.29	13.08	1.01	0.93	1343.70
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	10.4	49.5	107.5	5.5	5.1	9981.8
	Grading	tons per phase	0.0	0.0	0.1	0.0	0.0	9.4

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles Program-estimate		ROG	CO	NOx	PM10	PM2.5	CO2
			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Air Compressors	0.68	3.42	4.38	0.37	0.34	507.95
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Generator Sets	0.51	2.98	3.86	0.27	0.25	487.07
	1	Graders	1.07	3.48	10.38	0.58	0.54	671.02
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pumps	0.44	2.47	3.19	0.23	0.22	396.14
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rough Terrain Forklifts	0.22	2.03	2.73	0.15	0.14	372.74
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	1	Scrapers	1.46	7.25	17.70	0.71	0.66	1608.02
	2	Signal Boards	0.73	2.73	2.64	0.19	0.18	314.87
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	3	Tractors/Loaders/Backhoes	1.07	4.72	9.81	0.76	0.69	1007.77
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	6.2	29.3	54.9	3.3	3.0	5400.0
	Drainage	tons per phase	0.0	0.0	0.0	0.0	0.0	3.4

Paving	Default		ROG	CO	NOx	PM10	PM2.5	CO2
	Number of Vehicles							
	Override of Default Number of Vehicles	Program-estimate	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pavers	0.42	2.84	4.49	0.22	0.21	481.68
	1	Paving Equipment	0.32	2.69	3.53	0.18	0.16	426.30
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.70	3.02	6.18	0.46	0.42	559.07
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Signal Boards	0.73	2.73	2.64	0.19	0.18	314.87
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	3	Tractors/Loaders/Backhoes	1.07	4.72	9.81	0.76	0.69	1007.77
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	3.2	16.0	26.6	1.8	1.7	2789.7
	Paving	tons per phase	0.0	0.0	0.0	0.0	0.0	0.9
Total Emissions all Phases (tons per construction period) =>			0.0	0.1	0.1	0.0	0.0	14.2

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment		Default Values Horsepower		Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		106		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		10		8
Concrete/Industrial Saws		64		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		142		8
Excavators		163		8
Forklifts		89		8
Generator Sets		66		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		26		8
Pumps		53		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		20		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		45		8

0

END OF DATA ENTRY SHEET