VALIANO PROJECT

APPENDIX J

GREENHOUSE GASES ANALYSES REPORT

for the

DRAFT ENVIRONMENTAL IMPACT REPORT

PDS2013-SP-13-001, PDS2013-GPA-13-001,
PDS2013-REZ-13-001, PDS2013-TM-5575,
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Prepared for:
COUNTY OF SAN DIEGO
PLANNING & DEVELOPMENT SERVICES
5510 OVERLAND AVENUE, SUITE 310
SAN DIEGO, CA 92123

SUPPLEMENTAL MEMO FOR THE

VALIANO PROJECT ENVIRONMENTAL IMPACT REPORT APPENDIX J GREENHOUSE GASES ANALYSES REPORT

The purpose of this memo is to provide clarifications to the Draft Greenhouse Gases (GHG) Analyses Report prepared for the Valiano Project and circulated as part of CEQA documentation for the Project. That report (attached as circulated in December 2016 and January 2017) found that, based on Project design, the Project met identified thresholds of significance and no significant impact would occur as a result of Project implementation.

The cited thresholds were based on compliance with the State's 2020 GHG target set forth in Assembly Bill (AB) 32 and the State's 2030 GHG target set forth in Executive Order (EO) B-30-15, codified in Senate Bill (SB) 32 in September 2016. The thresholds were identified as 4.9 metric tons (MT) of carbon dioxide equivalents (CO_2e) per service population (SP) in 2020 (for compliance with AB 32) and 4.6 MT CO_2e/SP in 2021 (for compliance with SB 32 at Project buildout). This can be compared to the efficiency metric that would be derived by the GHG inventory that was developed during preparation of the County's General Plan, which took into account the unique characteristics of the region in calculating emissions, to demonstrate the link between the Statewide goal of AB 32, the State's efficiency metric, and a project-level GHG analysis.

During preparation of the County's General Plan, the University of San Diego's Energy Policy Initiatives Center (EPIC) calculated GHG emissions for the County for both community-wide sectors and County government operations for the years 1990 and 2006, with emissions projections for 2020. The 2005 GHG Inventory concluded that total emissions in the County of San Diego in 2005 comprised approximately 4,512,580 MT of CO_2e[1]. Accordingly, and based on the Scoping Plan's recommendation, a 15 percent reduction from the baseline year GHG emissions in the County of San Diego would have totaled approximately 3,835,693 MT CO_2e/year. Thus, the total 2020 GHG emission target for the County pursuant to EO S-3-05 would be 3,835,693 MT CO_2e/year.

According to the San Diego Association of Governments (SANDAG), the unincorporated County of San Diego is estimated to have a total 2020 population of 545,451 with approximately 114,338 jobs. Thus, the 2020 service population for the County would be 659,789 [2]. In order to achieve the County emission level of 3,835,693 MT CO_2e, the efficiency target in 2020 would be approximately 5.8 MT CO2e per service population.

By using the state's efficiency metric, the more stringent efficiency metric was applied in the report and was based on the most current information available at that time. The comparison to the efficiency target derived from the County's 2005 GHG Inventory provides evidence about the relationship between the Project and the assumptions in the state's Scoping Plan.

Nevertheless, the GHG legal and regulatory environment and best practices on CEQA analyses of GHGs

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[1] Anders, S.J., D.O. De Haan, N. Silva-Send, S.T. Tanaka, L. Tyner. 2008. University of San Diego School of Law Energy Policy Initiative Center (EPIC). San Diego County Greenhouse Gas Inventory: An Analysis of Regional Emissions and Strategies to Achieve AB 32 Targets. September.

[2] San Diego Association of Governments (SANDAG). 2016. Series 13 Regional Growth Forecast: Census Tract 203.07. Available at: http://datasurfer.sandag.org/api/forecast/13/tract/203.07/export/pdf.

have been in constant flux and there is no GHG threshold of general applicability for development projects within the County that has been approved through a public hearing process. Therefore, the Applicant is committing to achieve carbon neutrality through on-site design measures and off-site mitigation through purchase of carbon credits, as described below.

The Project, as analyzed in the circulated GHG Analysis, includes all feasible and quantifiable on-site GHG reduction measures. These are required as part of Project design in the Project EIR. These include the following:

- Participation in the California Green Builder (CGB) Program;
- Enhanced energy-efficient heating, ventilation, and air conditioning (HVAC) systems and duct seals insulation;
- Enhanced energy-efficient ceiling, attic and wall insulation;
- High-efficiency water heaters;
- Energy-efficient three-coat stucco exteriors;
- High efficiency window glazing;
- Energy Star appliances and energy-efficient lighting;
- Renewable energy would supply 100 percent of residential electricity needs per planning area (Neighborhoods 1-5) first through rooftop solar to the extent feasible based on factors such as roof angle, surface area, shading sources, as verified by the solar contractor. Where not technically feasible to supply a unit with 100 percent renewable energy through rooftop solar, the unit would be supplied with 100 percent renewable energy through different equivalent renewables program(s) or measures such as enrollment in SDG&E's EcoChoice program made enforceable through inclusion of the requirement in the Project's covenants, conditions and restrictions (CC&Rs) and through Project conditions of approval;
- The residential units would be prewired with sufficient electrical capacity and appropriate circuitry in proximity to vehicle parking areas and/or garages, to support residential electric vehicle charging stations;
- Parallel hot water piping or hot water recirculation systems;
- Buyer-optional high-efficiency clothes washers;
- Drought-tolerant landscaping plan;
- High-efficiency drip irrigation systems;
- The use of reclaimed water for outdoor irrigation;
- The Project would provide areas for storage and collection of recyclables and yard waste for each residence;
- Maximization of shade and minimization of impervious surfaces;
- Low-volatile organic compound (VOC) coatings and sealants during construction and operation;
- Natural gas fireplaces;
- Use of Tier 4 construction equipment; and
- Building products that have at least 10 percent recycled content.

When discussing project-level GHG emissions reduction actions and thresholds, the 2017 Climate Change Scoping Plan Update states "achieving no net increase in GHG emissions is the correct overall objective, but it may not be appropriate or feasible for every development project. An inability to mitigate a project's GHG emissions to zero does not necessarily imply a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA." For purposes of this environmental analysis, CEQA Guidelines Section 15126.4(c)(3) states that "measures to mitigate the significant effects of GHG emissions may include, among others: Offsite measures including offsets that are not otherwise required, to mitigate a project's

emissions." Since the recirculation of the DEIR, the Applicant has determined that additional off-site mitigation measures can further reduce GHG emissions to a net-zero level through the purchase of carbon offset credits. Therefore, in the context of this particular project, the project-specific GHG threshold is net-zero GHG.

Development under the Project would also result in changes in CO_2 sequestration from the atmosphere. By removing existing vegetation, the Project would also result in a one-time carbon exchange. To ensure the Project GHG emissions are fully offset to zero, emissions from this land use change have been estimated according to the IPCC protocol for vegetation and are described in Table 1, below.

Table 1
ONE-TIME LOSS THROUGH SEQUESTRATION

Land Use	Acres Impacted[1]	CO_2 Accumulation per Acre (MT CO2/acre)[2]	Total CO_2 Lost (MT)
Forest Land – Scrub	3.3	14.3	47
Forest Land – Trees	4.6	111	511
Cropland	96.7	6.2	600
		TOTAL	**1,157**

Notes:
[1] HELIX 2015d
[2] CalEEMod Appendix A

It should be noted that the loss of sequestered carbon estimate is conservative as the Project would also plant new landscape trees which would sequester additional carbon through each growth cycle, resulting in increasing amounts of sequestered carbon each year for the life of the tree. Furthermore, as required in Section 2.4, Biological Resources, of the EIR, impacts to forest land and cropland would be fully mitigated through off-site preservation and/or purchase of credits as an approved mitigation bank, thus providing long-term conservation value. The reduction of carbon emissions attributable to the Project through these additional vegetated lands has conservatively not been included.

The following measures have been added to the Project and included in the Final EIR.

> To ensure construction-related GHG emissions are offset to zero, the applicant shall complete the following:
>
> > Prior to issuance of the first grading permit, the applicant or its designee shall provide evidence to the County of San Diego (County) Planning and Development Services (PDS) that they have obtained a one-time purchase of carbon credits in the amount of 6,123 MT CO_2e. Construction emissions include all grading, site preparation, building construction, architectural coatings related emissions, and the one-time loss of carbon sequestered in existing on-site vegetation.
> >
> > Carbon credits shall be purchased through either i) a CARB-approved registry, such as the Climate Action Reserve, the American Carbon Registry, and the Verified

Carbon Standard; ii) through CAPCOA GHG Rx; or, iii) if no registry is in existence as identified above, then any other reputable registry or entity that issues carbon offsets, to the satisfaction of the Director of PDS. Evidence that offset credits sufficient to offset all GHG emissions from construction shall be provided to PDS to the satisfaction of the Director of PDS.

To ensure operations-related GHG emissions are offset to zero, the applicant shall complete the following:

Prior to the recordation of the first building permit, the applicant shall provide evidence to County PDS that they have obtained carbon credits for the incremental portion of the Project within the Site Plan in a quantity sufficient to offset, for a 30-year period, the operational GHG emissions from that incremental amount of development to net zero, consistent with the performance standards and requirements set forth below. The amount of carbon offsets required for each implementing Site Plan shall be based on the GHG emissions for each land use within the implementing Site Plan, as identified in the Table 2, *Operational GHG Emissions and Off-Site Carbon Offsets Per Land Use*. The Project's operational emissions would be 4,493 MT CO_2e at the time of full buildout.[3] Therefore, the Project shall be required to reduce the annual emissions by 4,493 MT CO_2e/year for a 30-year period (project life) or a total of 134,790 MT CO_2e. The "Project life" is 30 years, which is consistent with the methodology used by the South Coast Air Quality Management District's GHG guidance (SCAQMD 2008). The Project Applicant shall include in each implementing Site Plan a tabulation that identifies the overall carbon offsets required to mitigate the entire project's GHG emissions, the amount of carbon offsets purchased to date, and the remaining carbon offsets required to reduce the project's emissions to net zero.

Carbon credits shall be purchased through either i) a CARB-approved registry, such as the Climate Action Reserve, the American Carbon Registry, and the Verified Carbon Standard; ii) through CAPCOA GHG Rx; or, iii) if no registry is in existence as identified above, then any other reputable registry or entity that issues carbon offsets consistent with Cal. Health & Safety Code section 38562(d)(1), to the satisfaction of the Director of PDS. Evidence that offset credits sufficient to offset all GHG emissions from construction shall be provided to PDS to the satisfaction of the Director of PDS.

[3] As detailed in Section 5.1 of the Greenhouse Gas Analyses Report, this is a conservative estimate based on the construction of 334 single-family residential units. Since the completion of the emissions inventory, the Project's residential units have been reduced from 334 to 326 single-family residential units.

Table 2 OPERATIONAL GHG EMISSIONS AND OFF-SITE CARBON OFFSETS PER LAND USE				
	Single Family	**Second Dwelling Unit**	**Park**	**WTWRF**
Emissions (MT CO_2e)	4,034	347	9.57	102
Percent of Total Emissions	90%	8%	<1%	2%
Carbon Offsets Needed	4,034	347	9.57	102
Number of Units	334	54	1	1
Carbon Offset per Unit/Use	12.08	6.43	9.57	102

Source: Greenhouse Gas Analysis Report for the Valiano Project

Off-site measures, including offsets that are not otherwise required, to mitigate a project's GHG emissions are expressly authorized by CEQA Guidelines 15126.4(c)(3). The purchase of carbon offsets to reduce GHG emissions shall achieve real, permanent, quantifiable, verifiable, and enforceable reductions (Cal. Health & Safety Code section 38562(d)(1).

The County of San Diego PDS requires that all feasible project design features are provided prior to off-site mitigation to reduce GHG emissions. All of the project design features described above will be conditions of approval for the project.

Through the purchase of carbon credits, construction and operational related GHG emissions would be reduced to zero and therefore result in a less-than-significant contribution to cumulative GHG impacts. This does not change the less-than-significant finding disclosed during public circulation; it merely provides an additional measure through Project design to further ensure less-than significant impacts. Emissions from the Project's one-time sequestration loss is not new information regarding a substantial increase in the severity of GHG emissions because it represents less than a one percent increase in the total construction and operational GHG emissions disclosed in the circulated report. Even if it were a significant increase in severity, the carbon offsets to net-zero Project condition prevents it from rising to the level of a new significant GHG impact. This memo provides the necessary information. No further revisions are required in the circulated report and no recirculation is required.

Greenhouse Gas Analyses Report

Valiano Project

PDS2013-SP-13-001, PDS2013-GPA-13-001,
PDS2013-REZ-13-001, PDS2013-TM-5575,
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Prepared for:
County of San Diego
Planning & Development Services
5510 Overland Avenue, Suite 310
San Diego, CA 92123

Project Proponent:
Eden Hills Project Owner, LLC
2235 Encinitas Boulevard, Suite 216
Encinitas, CA 92024

Prepared by:
Joanne M. Dramko, AICP, County-approved Air Quality Consultant
HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

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GLOSSARY OF TERMS AND ACRONYMS

AB	Assembly Bill
ADT	average daily trips
AEP	Association of Environmental Professionals
AQMD	Air Quality Management District
BACT	Best Available Control Technology
BMPs	best management practices
CAA	Clean Air Act
CAFE	Corporate Average Fuel Economy
CALGreen	California Green Building
CalRecycle	California Department of Resources Recycling and Recovery
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAS	California Climate Adaptation Strategy
CAT	Climate Action Team
CBSC	California Building Standards Commission
CCR	California Code of Regulations
CCTP	Climate Change Technology Program
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CEUS	California Commercial End Use Survey
CF	chlorofluoride
CFC	cholorofluorocarbon
CGB	California Green Builder
CH_4	methane
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	County of San Diego
DU	dwelling unit
EIR	Environmental Impact Report
EO	Executive Order
EPIC	Energy Policy Initiative Center
F	Fahrenheit
GHG	greenhouse gas
GWP	global warming potential

GLOSSARY OF TERMS AND ACRONYMS (cont.)

HARRF	Hale Avenue Resource Recovery Facility
HFC	hydrofluorocarbon
HVAC	heating, ventilation, and air conditioning
I-	Interstate
ICLEI	International Council on Local Environment Initiatives
IPCC	Intergovernmental Panel on Climate Change
kBTU	kiloBritish Thermal Units
kWh	kilowatt-hours
LCFS	Low Carbon Fuel Standard
LEED	Leadership in Energy and Environmental Design
LLG	Linscott, Law & Greenspan Engineers
MMT	million metric tons
mpg	miles per gallon
mph	miles per hour
MPO	Metropolitan Planning Organization
Montreal Protocol	Montreal Protocol on Substances That Deplete the Ozone Layer
MT	metric ton
N_2O	nitrous oxide
NHTSA	National Highway Traffic Safety Administration
NO_2	nitrogen dioxide
NO_X	oxides of nitrogen
NSHP	New Solar Home Partnership
OAL	Office of Administrative Law
ODCs	ozone-depleting substances
OPR	Office of Planning and Research
PDF	project design feature
PDS	Planning & Development Services (County of San Diego)
PFC	perfluorocarbon
PM	Particulate Matter
ppm	parts per million
Protocol	California Climate Action Registry General Reporting Protocol
PSD	Prevention of Significant Deterioration
PUC	Public Utilities Commission
PV	photovoltaic

GLOSSARY OF TERMS AND ACRONYMS (cont.)

RASS	Residential Appliance Saturation Survey
RCP	Regional Comprehensive Plan
Rincon MWD	Rincon del Diablo Municipal Water District
RPS	Renewable Portfolios Standard
RTAC	Regional Targets Advisory Committee
RTP	Regional Transportation Plan
RW	reclaimed water
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SDAB	San Diego Air Basin
SDCWA	San Diego County Water Authority
SDG&E	San Diego Gas and Electric
SEP	2009 County Strategic Energy Plan
SF_6	hexafluoride
SMAQMD	Sacramento Metropolitan Air Quality Management District
SP	service population
SR	State Route
SWP	state water project
TIA	Traffic Impact Analysis
UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Convention on Climate Change
U.S.	United States
USEPA	U.S. Environmental Protection Agency
VMT	vehicle miles traveled
VOCs	volatile organic compounds
VWD	Vallecitos Water District
WTWRF	wastewater treatment and water reclamation facility

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EXECUTIVE SUMMARY

This report evaluates the potential greenhouse gas (GHG) emission impacts associated with the Valiano Project ("Project" or "Proposed Project"). An assessment was made to estimate the total GHG emissions that would be emitted as a result of construction and operation of the Proposed Project. Construction sources of GHG emissions include heavy construction equipment, worker vehicle miles traveled (VMT), construction waste, and water use. Operational sources of GHG emissions sources include energy, transportation, water use, and solid waste.

Project buildout is anticipated to be in 2021; therefore it would be required to comply with the 2016 Title 24 Energy Code (which goes into effect January 1, 2017); the 2013 CALGreen Building Code; Assembly Bill (AB) 341, which targets 75 percent diversion of operational waste; reduction of potable water use by 20 percent; low-flow water and bathroom fixtures; reduction of wastewater generation by 20 percent; weather-based irrigation systems; provide areas for storage and collection of recyclables and yard waste; roof anchors and pre-wiring to allow for the installation of photovoltaic (PV) systems; and preparation of a Construction and Demolition Debris Management Plan in compliance with Sections 68.508 through 68.518 of the County of San Diego Municipal Code that requires 90 percent of inerts and 70 percent of all other materials to be recycled.

In addition to the regulatory requirements listed above, the Project would incorporate several design features and best management practices to reduce construction and operational GHG emissions. These features include:

- Participation in the California Green Builder (CGB) Program;
- Enhanced energy-efficient heating, ventilation, and air conditioning (HVAC) systems and duct seals insulation;
- Enhanced energy-efficient ceiling, attic and wall insulation;
- High-efficiency water heaters;
- Energy-efficient three-coat stucco exteriors;
- High-efficiency window glazing;
- Energy Star appliances and energy-efficient lighting;
- Renewable energy would supply 100 percent of residential electricity needs per planning area (Neighborhoods 1-5), which may include but not be limited to, rooftop solar or mandatory continued enrollment in SDG&E's SunRate, or equivalent, renewables program;
- The residential units would be prewired with sufficient electrical capacity and appropriate circuitry in proximity to vehicle parking areas and/or garages, to support residential electric vehicle charging stations;

- Parallel hot water piping or hot water recirculation systems;
- Buyer-optional high-efficiency clothes washers;
- Drought-tolerant landscaping plan;
- High-efficiency drip irrigation systems;
- The use of reclaimed water from the proposed wastewater treatment and water reclamation facility (WTWRF) for outdoor irrigation;
- The Project would provide areas for storage and collection of recyclables and yard waste for each residence;
- Maximization of shade and minimization of impervious surfaces;
- Low-volatile organic compound (VOC) coatings and sealants during construction and operation;
- Natural gas fireplaces;
- Use of Tier 4 construction equipment; and
- Building products that have at least 10 percent recycled content.

The Project-related construction activities are estimated to generate approximately 4,966 metric tons (MT) of carbon dioxide equivalent (CO_2e). Construction emissions are amortized over 20 years, such that the proposed construction activities would contribute an average of 248 MT per year of CO_2e emissions. The Project-related operational and amortized construction GHG emissions are estimated to generate approximately 4,741 MT CO_2e per year.

The impact significance determination relies upon an efficiency threshold based on compliance with the California's target of reducing 2020 GHG emissions to 1990 levels, consistent with AB 32. The efficiency target for 2020 is 4.9 MT CO_2e per service population (SP) per year. The efficiency threshold, adjusted for anticipated Project buildout in 2021, is 4.6 MT CO_2e/SP/year, in keeping with the 2030 emissions reduction goal of Executive Order (EO) B-30-15, codified by Senate Bill (SB) 32. The Project would result in emissions totaling 4.6 MT CO_2e/SP/year. As such, the Project would be consistent with AB 32, EO B-30-15, and SB 32. GHG emission impacts would be less than significant.

The Project also includes three off-site wastewater pipeline options in lieu of the proposed on-site WTWRF. Under each of these options, the Project would reduce the renewables portfolio to require only 80 percent of the residential electricity needs be met by renewable sources. Each of the three off-site wastewater pipeline options result in 4.6 MT CO_2e/SP/year. As such, the Project with the off-site wastewater pipeline would be consistent with AB 32, EO B-30-15, and SB 32. GHG emission impacts would be less than significant.

1.0 INTRODUCTION AND PROJECT DESCRIPTION

This report evaluates the significance of the Proposed Project's contribution of greenhouse gas (GHG) emissions to statewide GHG emissions and GHG emissions reduction targets. To evaluate the incremental effect of Project development on statewide and global climate change, it is important to have a basic understanding of the nature of the global climate change problem.

1.1 Understanding Global Climate Change

Global climate change is a change in the average weather of the earth, which can be measured by wind patterns, storms, precipitation, and temperature. The earth's climate is in a state of constant flux with periodic warming and cooling cycles. Extreme periods of cooling are termed "ice ages," which may then be followed by extended periods of warmth. For most of the earth's geologic history, these periods of warming and cooling have been the result of many complicated, interacting natural factors that include: volcanic eruptions which spew gases and particles (dust) into the atmosphere; the amount of water, vegetation, and ice covering the earth's surface; subtle changes in the earth's orbit; and the amount of energy released by the sun (sun cycles). However, since the beginning of the Industrial Revolution around 1750, the average temperature of the earth has been increasing at a rate that is faster than can be explained by natural climate cycles alone.

With the Industrial Revolution came an increase in the combustion of carbon-based fuels such as wood, coal, oil, natural gas, and biomass. Industrial processes have also created emissions of substances that are not found in nature. This in turn has led to a marked increase in the emissions of gases that have been shown to influence the world's climate. These gases, termed "greenhouse" gases, influence the amount of heat that is trapped in the earth's atmosphere. Because recently observed increased concentrations of GHGs in the atmosphere are related to increased emissions resulting from human activity, the current cycle of "global warming" is generally believed to be largely due to human activity. Of late, the issue of global warming or global climate change has arguably become the most important and widely debated environmental issue in the United States and the world. Because climate change is caused by the collective of human actions taking place throughout the world, it is quintessentially a global or cumulative issue.

1.2 Greenhouse Gases of Primary Concern

Global climate change refers to changes in Earth's temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by naturally occurring atmospheric gases, including water vapor, carbon dioxide (CO_2), methane (CH_4) nitrous oxide (N_2O), hydrofluorocarbons (HFCs, such as HFC-23), perfluorocarbons (PFCs; such as CF_4), and sulfur hexafluoride (SF_6), which are known as GHGs. The potential of a gas to trap heat and warm the atmosphere is measured by its global warming potential (GWP). GHGs either break down or are absorbed over time. Thus, the potential of a gas to contribute to global warming is limited by the time it is in the atmosphere, or its "atmospheric lifetime." To account for these effects, GWPs are calculated over a 100-year time horizon (U.S. Environmental Protection Agency [USEPA] 2010a). Because of its relative abundance in the atmosphere and its relatively long atmospheric lifetime, carbon

dioxide has been designated the reference gas for comparing GWPs. Thus, the 100-year GWP of CO_2 is equal to one (see Table 1).

Table 1
GLOBAL WARMING POTENTIAL AND ATMOSPHERIC LIFETIMES

Gas	Atmospheric Lifetime (Years)	100-year GWP[a]
Carbon Dioxide (CO_2)	50-200	1
Methane (CH_4)[b]	9-15	21
Nitrous oxide (N_2O)	120	310
HFC-23	264	11,700
HFC-125	32.6	2,800
HFC-134a	14.6	1,300
HFC-143a	48.3	3,800
HFC-152a	1.5	140
HFC-227ea	36.5	2,900
HFC-236fa	209	6,300
HFC-4310mee	17.1	1,300
CF_4	50,000	6,500
C_2F_6	10,000	9,200
C_4F_{10}	2,600	7,000
C_6F_{14}	3,200	7,400
SF_6	3,200	23,900

Source: USEPA 2010a.
[a] Global warming potentials (GWPs) used here are calculated over 100-year time horizon.
[b] The methane GWP includes the direct effects and those indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

1.2.1 Types of GHGs

Water vapor is the most abundant and variable GHG in the atmosphere. It is not considered a pollutant; it maintains a climate necessary for life. The main source of water vapor is evaporation from the oceans (approximately 85 percent). Other sources include evaporation from other water bodies, sublimation (change from solid to gas) from ice and snow, and transpiration from plant leaves (Association of Environmental Professionals; [AEP] 2007).

CO_2 is an odorless, colorless GHG. Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic (human-caused) sources of CO_2 include the burning of fuels such as coal, oil, natural gas, and wood. Concentrations are currently around 379 parts per million (ppm); some scientists say that concentrations may increase to 1,130 CO_2 equivalent (CO_2e) ppm by 2100 as a direct result of anthropogenic sources (Intergovernmental Panel on Climate Change; [IPCC] 2007). Some predict that this will result in an average global temperature rise of at least 7.2^o Fahrenheit (^{o}F) (IPCC 2007). The GWP of CO_2 is defined as one; the GWP of other GHGs is expressed as multiples of the GWP of CO_2.

CH_4 is a gas and is the main component of natural gas used in homes. It has a GWP of about 21, or 21 times the GWP of CO_2. A natural source of CH_4 is from the decay of organic matter. Geological deposits known as natural gas fields contain CH_4, which is extracted for fuel. Other sources are from decay of organic material in landfills, fermentation of manure, and cattle digestion.

N_2O, also known as laughing gas, is a colorless gas and has a GWP of about 310. N_2O is produced by microbial processes in soil and water, including reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (e.g., nylon and nitric acid production) also emit N_2O. It is used in rocket engines, as an aerosol spray propellant, and in race cars. During combustion, NO_X (NO_X is a generic term for mono-nitrogen oxides, NO and NO_2) is produced as a criteria pollutant and is not the same as N_2O. Very small quantities of N_2O may be formed during fuel combustion by nitrogen and oxygen (American Petroleum Institute [API] 2004).

Fluorocarbons are gases formed synthetically by replacing all hydrogen atoms in CH_4 or ethane with chlorine and/or fluorine atoms. Chlorofluorocarbons (CFCs) are nontoxic, nonflammable, insoluble, and chemically nonreactive in the troposphere (the level of air at earth's surface). Chlorofluorocarbons were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone; therefore, their production was stopped by requirements of the Montreal Protocol (as described in Section 1.1.1). Fluorocarbons have a GWP of between 140 and 11,700, with the lower end being for HFC-152a and the higher end being for HFC-23.

SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It has the highest GWP of any gas (23,900). SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Ozone is a GHG, although unlike the other GHGs, it is relatively short-lived in the troposphere and, therefore, is not global in nature. According to the California Air Resources Board (CARB), it is difficult to make an accurate determination of the contribution of ozone precursors (NO_X and volatile organic compounds [VOCs]) to global warming (CARB 2006).

A summary of the most common naturally occurring and artificial GHGs is provided in Table 1.

Of the gases listed in Table 1, CO_2, CH_4 and N_2O, are produced by both natural and anthropogenic (human) sources. The remaining gases HFCs, chlorofluorides (CFs), and SF_6, are the result of solely human processes.

The increase in the earth's temperature is expected to have wide-ranging effects on the environment. Although global climate change is anticipated to affect all areas of the globe, there are numerous implications of direct importance to California. Statewide average temperatures are anticipated to increase by between 3 and 10.5°F by 2100. Some climate models indicate that this warming may be greater in the summer than in the winter. This could result in widespread adverse impacts to ecosystem health, agricultural production, water use and supply, and energy demand. Increased temperatures could reduce the Sierra Nevada snowpack and put additional

strain on the state's water supply. In addition, increased temperatures would be conducive to the formation of air pollutants, resulting in poor air quality.

It is also important to note that even if GHG emissions were to be eliminated or dramatically reduced, it is projected that the effect of those emissions would continue to affect global climate for centuries.

1.3 Project Location and Description

The Proposed Project includes an approximately 239-acre site in an unincorporated portion of San Diego County (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 1.7 miles west of Interstate (I-) 15 and 0.6 mile south of State Route (SR-) 78 at its closest points. Principal site access is from SR-78, Nordhal 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 Proposed Project consists of a residential community with 326 single-family dwelling units (DUs) and related facilities within a total developed area of approximately 92 acres. The Project also proposes to develop up to 54 Second Dwelling Units which are ideal for multi-generational families. These units could be attached or detached from the main unit and would be a minimum of 8 feet from the rear lot line and no greater than 50 percent of the width of the main structure. Second Dwelling Units would comply with section 6156(x) and other applicable sections of the Zoning Ordinance, except that they would be allowed on lots smaller than 20,000 square feet as long as they met the setbacks set by the Valiano Specific Plan. The residential development is divided into five distinct neighborhoods, with a minimum lot size of 5,870 square feet and an overall average lot size of approximately 14,600 square feet. 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 2.7-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).

The Project also includes three potential options for the provision of sewer service, in lieu of the proposed on-site 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.

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

1.4 Regulatory Requirements and Project Design Features that Reduce GHG Emissions

1.4.1 Regulatory Requirements

The Project would be required to comply with the following regulations for the reduction of GHG emissions:

- 2016 Title 24 Energy Code
- 2013 CALGreen Building Code, which requires:
    - 50 percent diversion of on-site construction waste and on-going operational waste through reuse and recycling
    - Reduction of potable water use by 20 percent
    - Low-flow water and bathroom fixtures
    - Reduction of wastewater generation by 20 percent
    - Weather-based irrigation systems
    - Provide areas for storage and collection of recyclables and yard waste
    - Inclusion of roof anchors and pre-wiring to allow for the installation of photovoltaic (PV) systems
- Preparation of a Construction and Demolition Debris Management Plan in compliance with Sections 68.508 through 68.518 of the County of San Diego Municipal Code that requires 90 percent of inerts and 70 percent of all other materials to be recycled.

1.4.2 Project Design Features and Construction Best Management Practices

1.4.2.1 *California Green Builder Program*

The Proposed Project would be designed in accordance with the Building Industry Association's California Green Builder (CGB) program, a professionally recognized green building program that identifies building performance standards to achieve improved energy efficiency, water conservation, sustainable materials use, waste reduction, lumber conservation, indoor air quality, and heat island avoidance. The CGB program is a program recognized by the California Energy

Commission (CEC) as one of several green building performance rating systems available to potentially lower GHG emissions from buildings (California Building Standards Code 2010).

The key CGB design features accounted for in the Proposed Project's GHG reduction estimates include: compliance with Title 24 2016 energy code and installation of low flow water fixtures to achieve water savings as required as part of the 2013 CALGreen Building Code. These features would be included as building permit conditions and verified prior to the issuance of final certificate of occupancy.

1.4.2.2 *Energy Efficiency*

The Project would include several features that would improve energy efficiency to comply with 2016 Title 24 energy efficiency requirements, including:

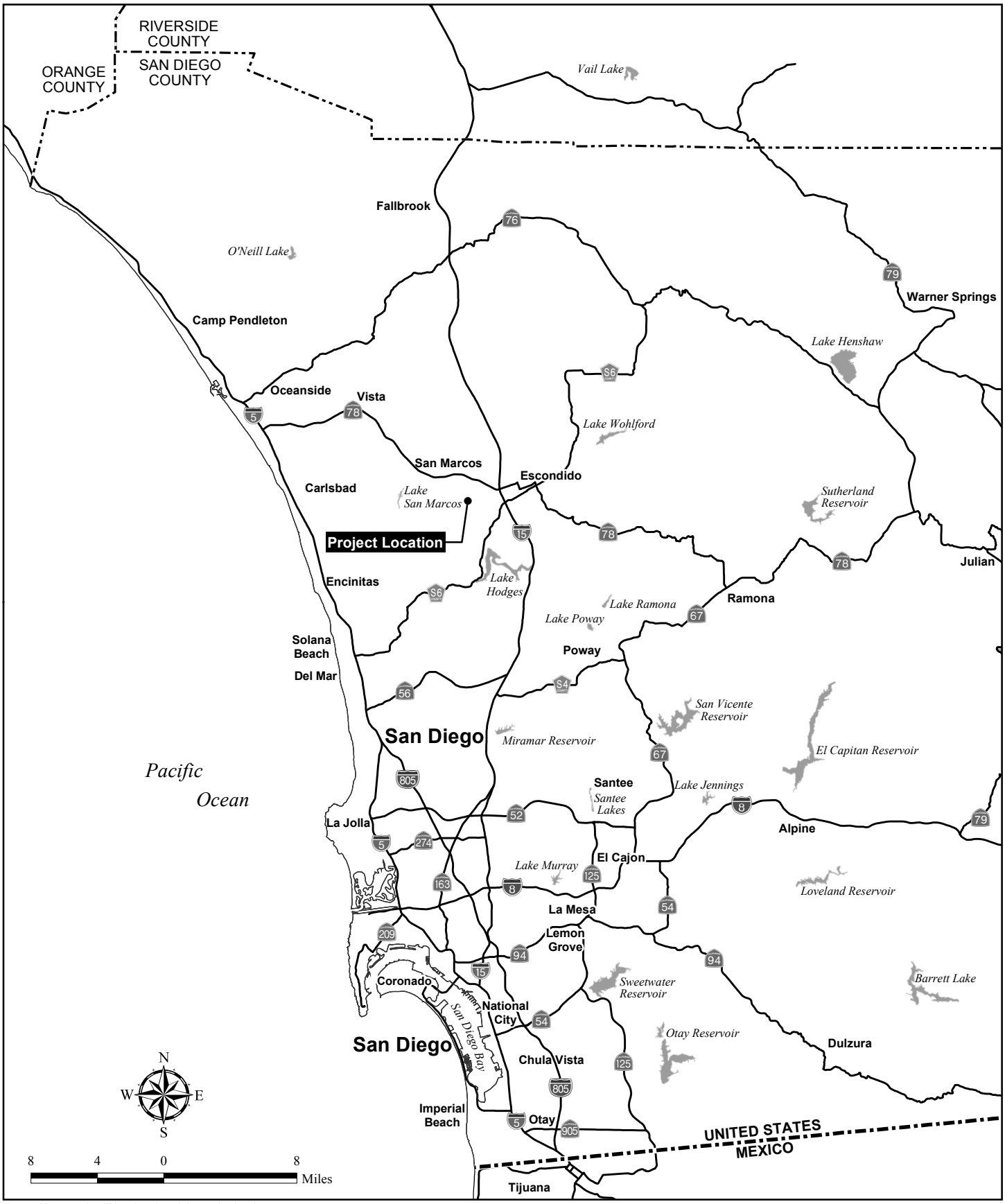
- Enhanced heating, ventilation, and air conditioning (HVAC) systems and duct seals insulation;
- Enhanced ceiling, attic and wall insulation;
- High-efficiency water heaters;
- Energy-efficient three-coat stucco exteriors;
- High-efficiency window glazing;
- Energy Star appliances and energy-efficient lighting;
- Renewable energy would supply 100 percent of residential electricity needs per planning area (Neighborhoods 1-5), which may include but not be limited to, rooftop solar or mandatory continued enrollment in SDG&E's SunRate, or equivalent, renewables program; and
- Residential units would be prewired with sufficient electrical capacity and appropriate circuitry in proximity to vehicle parking areas and/or garages, to support residential electric vehicle charging stations.

These energy features would undergo independent third-party inspection and diagnostics as part of the CGB verification and commissioning process. The energy features would also be verified in the Title 24 Compliance Report submitted during the building permit process.

1.4.2.3 *Water Conservation*

The Project would incorporate the following features to reduce water use:

- Parallel hot water piping or hot water recirculation systems;
- Buyer-optional high-efficiency clothes washers;



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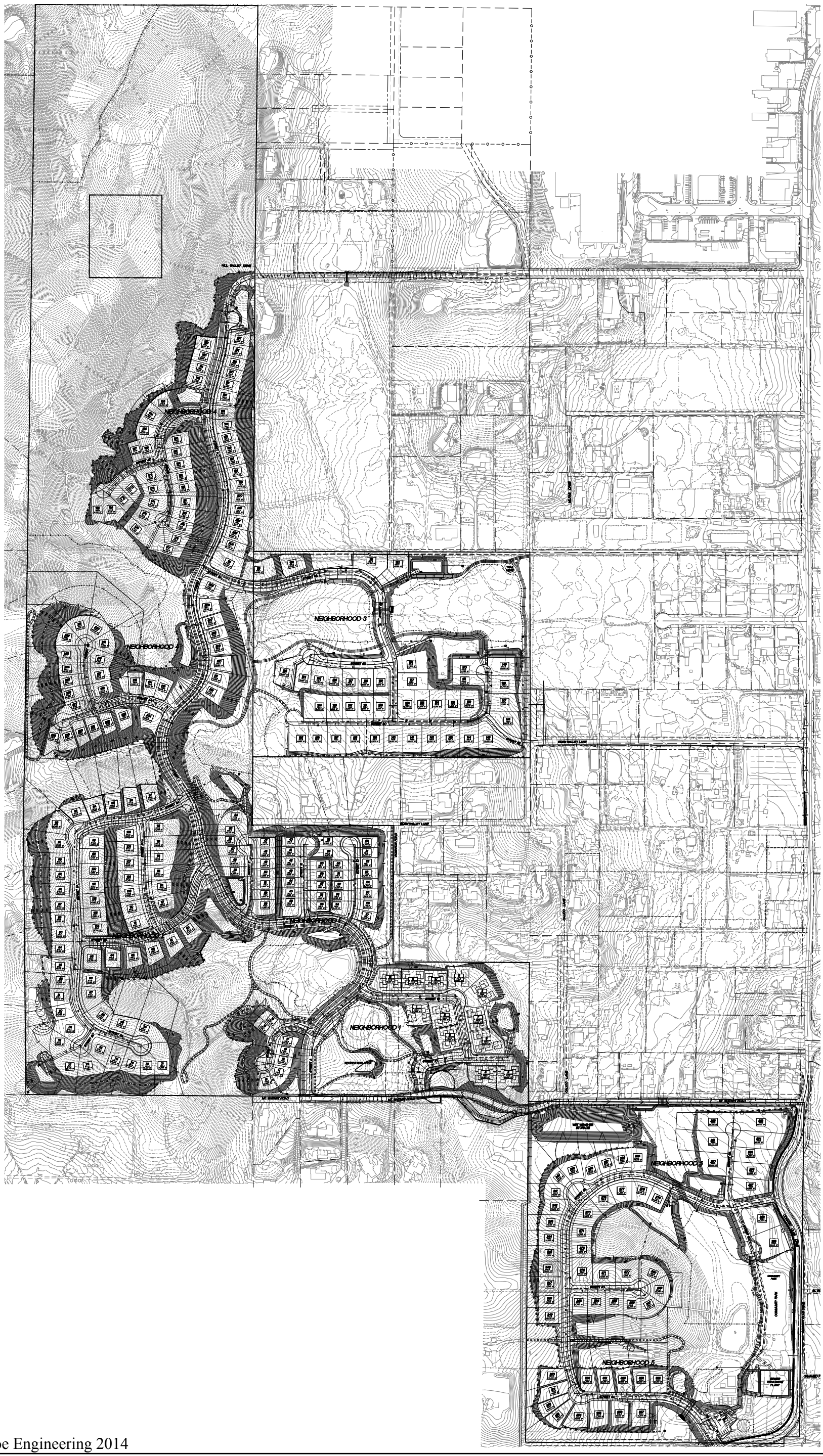
Regional Location Map

VALIANO

HELIX Environmental Planning

Figure 1



Source: Fuscoe Engineering 2014

Site Plan

VALIANO

HELIX Environmental Planning

Figure 2

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- Drought-tolerant landscaping plan;
- High efficiency drip irrigation systems; and
- The use of reclaimed water from the proposed WTWRF for outdoor irrigation.

1.4.2.4 *Materials Use and Waste Reduction*

The Project would provide areas for storage and collection of recyclables and yard waste for each residence.

1.4.2.5 *Pollutant Control and Heat Island Reduction*

To maximize shade and reduce heat island effects, the landscape plan includes strategic location of deciduous trees and other vegetation. Impervious surfaces would also be minimized and pervious pavers used instead where practical. No CFC-based refrigerants would be used, and interior finishes, adhesives, sealants, paints and coatings, and carpet systems would be low in VOCs, and they would meet the testing and product requirements of one or more nationally recognized green product labeling programs. Residences would include natural gas fireplaces.

1.4.2.6 *Construction Best Management Practices*

The Project would require the construction fleet to use any combination of diesel catalytic converters, diesel oxidation catalysts, and diesel particulate filters, as well as utilize CARB/USEPA Engine Certification Tier 4, or equivalent equipment.

The Project would utilize building products that have at least 10 percent recycled content and use low-VOC coatings.

2.0 ENVIRONMENTAL SETTING

2.1 Worldwide GHG Inventory

The United Nations IPCC constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The IPCC concluded that a stabilization of GHGs at 400 to 450 ppm CO_2e concentration is required to keep global mean warming below 3.6ºF, which is assumed to be necessary to avoid dangerous climate change (AEP 2007).

In 2004, total GHG emissions worldwide were estimated at 20,135 million metric tons (MMT) CO_2e emissions (United Nations Framework Convention on Climate Change [UNFCCC] 2006a). The U.S. contributed the largest portion (35 percent) of global GHG emissions in 2004. The California Energy Commission (CEC 2006) identifies the following breakdown of GHG emissions in California: CO_2, approximately 84 percent; CH_4, approximately 5.7 percent; N_2O, approximately 6.8 percent; and other pollutants, approximately 2.9 percent. As noted above, the transportation sector is the single largest category of California's GHG emissions, accounting for 41 percent of emissions statewide. CARB estimates that the year 1990 statewide CO_2e emissions level was 427 MMT (CARB 2007a). In year 2004, California produced 492 MMT of total

CO_2e emissions. The total U.S. GHG emissions was 7,260 MMT of CO_2e emissions in 2005, of which 84 percent was CO_2 emission (USEPA 2006). On a national level, approximately 33 percent of GHG emissions were associated with transportation and about 41 percent were associated with electricity generation (USEPA 2006).

2.2 State and Regional GHG Inventories

CARB performed statewide inventories for the years 1990 to 2008 (Table 2). The inventory is divided into nine broad sectors of economic activity: agriculture, commercial, electricity generation, forestry, high GWP emitters, industrial, recycling and waste, residential, and transportation. Emissions are quantified in million metric tons of CO_2 equivalent (MMT CO_2e).

Table 2
CALIFORNIA GHG EMISSIONS BY SECTOR IN 1990, 2000, 2004, AND 2008

Sector	1990 Emissions in MMT CO_2e (% total)[1]	2000 Emissions in MMT CO_2e (% total)[1]	2004 Emissions in MMT CO_2e (% total)[1]	2008 Emissions in MMT CO_2e (% total)[1]
Sources				
Agriculture	23.4 (5%)	25.44 (6%)	28.82 (6%)	28.06 (6%)
Commercial	14.4 (3%)	12.80 (3%)	13.20 (3%)	14.68 (3%)
Electricity Generation	110.6 (26%)	103.92 (23%)	119.96 (25%)	116.35 (24%)
Forestry (excluding sinks)	0.2 (<1%)	0.19 (<1%)	0.19 (<1%)	0.19 (<1%)
High GWP	--	10.95 (2%)	13.57 (3%)	15.65 (3%)
Industrial	103.0 (24%)	97.27 (21%)	90.87 (19%)	92.66 (19%)
Recycling and Waste	--	6.20 (1%)	6.23 (1%)	6.71 (1%)
Residential	29.7 (7%)	30.13 (7%)	29.34 (6%)	28.45 (6%)
Transportation	150.7 (35%)	171.13 (37%)	181.71 (38%)	174.99 (37%)
Unspecified Remaining[2]	1.3 (<1%)	--	--	--
Subtotal	*433.3*	*458.03*	*483.89*	*477.74*
Sinks				
Forestry Sinks	-6.7 (--)	-4.72 (--)	-4.32 (--)	-3.98 (--)
TOTAL	**426.6**	**453.31**	**479.57**	**473.76**

Source: CARB 2007b, 2010a
[1] Percentages may not total 100 due to rounding.
[2] Unspecified fuel combustion and ozone depleting substance (ODS) substitute use, which could not be attributed to an individual sector.

As shown in Table 2, statewide GHG source emissions totaled 433 MMT CO_2e in 1990, 458 MMT CO_2e in 2000, 484 MMT CO_2e in 2004, and 478 MMT CO_2e in 2008. According to data from the CARB, it appears that statewide GHG emissions peaked in 2004, and are now beginning to decrease (CARB 2010a). Transportation-related emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions.

The forestry sector is unique because it not only includes emissions associated with harvest, fire, and land use conversion (sources), but it also includes removals of atmospheric CO_2 (sinks) by photosynthesis, which is then bound (sequestered) in plant tissues. As seen in Table 2, the

forestry sector consistently removes more CO_2 from the atmosphere statewide than it emits. As a result, although decreasing over time, this sector represents a net sink, removing a net 6.7 MMT CO_2e from the atmosphere in 1990, a net 4.7 MMT CO_2e in 2000, a net 4.3 MMT CO_2e in 2004, and a net 4.0 MMT CO_2e in 2008.

A San Diego regional emissions inventory was prepared by the University of San Diego School of Law, Energy Policy Initiative Center (EPIC) that took into account the unique characteristics of the region. Their 2006 emissions inventory for San Diego is duplicated below in Table 3. The sectors included in this inventory are somewhat different from those in the statewide inventory.

According to the San Diego County GHG Inventory prepared by the EPIC in 2008, San Diego County emitted 34 MMT of CO_2e emissions in 2006. The largest contributor of GHGs in San Diego County was the on-road transportation category, which comprised 45 percent (16 MMT CO_2e) of the total amount. The second highest contributor was the electricity category, which contributed 9 MMT CO_2e, or 25 percent of the total. Together, the on-road transportation and electricity categories comprised 70 percent of the total GHG emissions for the County. The remaining amount was contributed by natural gas consumption, civil aviation, industrial processes, off-road equipment, waste, agriculture, rail, water-borne navigation, and other fuels. By 2020, regional GHG emissions are expected to be 43 MMT of CO_2e.

Table 3
SAN DIEGO COUNTY GHG EMISSIONS BY SECTOR IN 2006

Sector	2006 Emissions in MMT CO2e (% total)[1]
Agriculture/Forestry/Land Use	0.7 (2%)
Waste	0.7 (2%)
Electricity	9 (25%)
Natural Gas Consumption	3 (8%)
Industrial Processes & Products	1.6 (5%)
On-Road Transportation	16 (45%)
Off-Road Equipment & Vehicles	1.3 (4%)
Civil Aviation	1.7 (5%)
Rail	0.3 (<1%)
Water-Borne Navigation	0.127 (<0.5%)
Other Fuels/Other	1.1 (3%)
TOTAL	**35.5**

Source: USD EPIC 2008. San Diego County Greenhouse Gas Inventory: An Analysis of Regional Emissions and Strategies to Achieve (Assembly Bill) AB 32 Targets. Prepared by the University of San Diego School of Law, Energy Policy Initiative Center (EPIC), and available online at http://www.sandiego.edu/ epic/ghginventory/.

[1] Percents may not total 100 due to rounding.

Similar to the statewide emissions, transportation-related GHG emissions contributed the most countywide, followed by emissions associated with energy use.

2.3 On-site GHG Inventory

The existing Project site is currently vacant with the exception of one occupied residential structure and the equestrian center. There are no current significant sources of on-site GHG emissions. Natural vegetation and soils temporarily store carbon as part of the terrestrial carbon cycle. Carbon is assimilated into plants as they grow and then dispersed back into the environment when they die. Soil carbon accumulates from inputs of plants, roots, and other living components of the soil ecosystem (i.e., bacteria, worms, etc.). Soil carbon is lost through biological respiration, erosion, and other forms of disturbance. The existing GHG emissions are likely to be negligible.

2.4 Consequences of Global Climate Change

CARB projects a future statewide GHG emissions increase of more than 23 percent (from 2004) by 2020 given current trends (CARB 2008a). The 2008 EPIC study predicts a countywide increase to 43 MMT CO_2e, or roughly 20 percent (from 2006) by 2020, given a BAU trajectory. Global GHG emissions forecasts also predict similar substantial increases, given a BAU trajectory.

The anticipated consequences of global climate change have the potential to result in adverse impacts. Any increase in statewide average temperatures could result in widespread adverse impacts to ecosystem health, agricultural production, water use and supply, and energy demand. Increased temperatures could also reduce the Sierra Nevada snowpack and put additional strain on the region's water supply. In addition, increased temperatures would be conducive to the formation of air pollutants resulting in poor air quality.

To effectively address the challenges that a changing climate will bring, the State of California strengthened its commitment to climate adaptation and mitigation (i.e., reducing state GHG emissions) policies when Governor Arnold Schwarzenegger signed Executive Order (EO) S-13-08 on November 14, 2008. The order called on state agencies to develop California's first ever strategy to identify and prepare for these expected climate impacts. The California Natural Resources Agency (CNRA) has taken the lead in developing this adaptation strategy, working through the Climate Action Team (CAT). Seven sector-specific working groups led by 12 state agencies, boards and commissions, and numerous stakeholders were convened for this effort. Adaptation is a relatively new concept in California policy. The 2009 California Climate Adaptation Strategy (CAS) report summarizes the best-known science on climate change impacts in the state to assess vulnerability and outline possible solutions that can be implemented within and across state agencies to promote resiliency (CNRA 2009). This is the first step in an ongoing, evolving process to reduce California's vulnerability to climate impacts.

Future residents of the Proposed Project site could be exposed to increased risk of dehydration, heat stroke, heat exhaustion, heart attack, stroke, and respiratory disease. These risks, however, would be no different from those experienced by the San Diego region as a whole under the described scenario. Increased temperatures would result in more frequent use of air conditioning that would increase energy costs to residents, and could put a strain on the area's energy supplies. Because the Proposed Project is located inland well above sea level, no impacts related to sea level rise are anticipated.

3.0 REGULATORY SETTING

All levels of government have some responsibility for the protection of air quality, and each level (international, federal, state, and regional/local) has specific responsibilities relating to air quality regulation. GHG emissions and the regulation of GHGs is a relatively new component of air quality.

3.1 International Greenhouse Gas Legislation

3.1.1 Montreal Protocol

The Coordinating Committee on the Ozone Layer was established by the United Nations Environment Program (UNEP) in 1977, and UNEP's Governing Council adopted the World Plan of Action on the Ozone Layer in 1977. Continuing efforts led to the signing of the Vienna Convention on the Protection of the Ozone Layer in 1985. This in turn led to the creation of the Montreal Protocol on Substances That Deplete the Ozone Layer (Montreal Protocol), an international treaty designed to protect the stratospheric ozone layer by phasing out production of ozone-depleting substances (ODCs). The Montreal Protocol was adopted on September 16, 1987 and became effective on January 1, 1989.

By the end of 2006, the 191 parties to the treaty had phased out over 96 percent of ODCs (UNEP 2007a). Because of this success, scientists are now predicting that the ozone hole will "heal" later this century (UNEP 2007b). The substantial reduction of ODCs also has benefits relative to global climate change, because these substances are potent GHGs. As noted, however, the phasing out of the ODCs has led to increased use of non-ozone depleting substances, such as HFCs, which, although not detrimental to the ozone layer, are also potent GHGs.

3.1.2 United Nations Framework Convention on Climate Change

The United States participates in the United Nations Framework Convention on Climate Change, which was signed on March 21, 1994. The Kyoto Protocol is a treaty adopted under the UNFCCC and was the first-ever international agreement to regulate GHG emissions. It has been estimated that if the commitments outlined in the Kyoto Protocol are met, global GHG emissions could be reduced by an estimated five percent from 1990 levels during the first commitment period of 2008-2012. Notably, while the United States is a signatory to the Kyoto Protocol, Congress has not ratified the Protocol and the United States is not bound by the Protocol's commitments.

In December 2012, the United Nations representatives met in Doha, Qatar to attempt to develop a framework for addressing global climate change issues in the future. Doha Conference produced a package of documents collectively titled *The Doha Climate Gateway*. The documents collectively contained an amendment of the Kyoto Protocol (to be ratified before entering into force) featuring an second commitment period running from 2012 until 2020 limited in scope to 15 percent of the global carbon dioxide emissions due to the lack of commitments of Japan, Russia, Belarus, Ukraine, New Zealand (nor the U.S. and Canada, who are not parties to the Protocol in that period) and due to the fact that developing countries like China (the world's

largest emitter), India and Brazil are not subject to emissions reductions under the Kyoto Protocol.

3.2 Federal Greenhouse Gas Regulations

3.2.1 Federal Clean Air Act

The U.S. Supreme Court ruled on April 2, 2007, in *Massachusetts v. U.S. Environmental Protection Agency*, that CO_2 is an air pollutant, as defined under the Clean Air Act (CAA), and that the USEPA has the authority to regulate emissions of GHGs. The USEPA announced that GHGs (including CO_2, CH_4, N_2O, HFC, PFC, and SF_6) threaten the public health and welfare of the American people. This action was a prerequisite to finalizing the USEPA's GHG emissions standards for light-duty vehicles, which were jointly proposed by the USEPA and the United States Department of Transportation's National Highway Traffic Safety Administration (NHTSA). The standards were established on April 1, 2010 for 2012 through 2016 model year vehicles and on October 15, 2012 for 2017 through 2025 model year vehicles (USEPA 2011; USEPA and NHTSA 2012).

3.2.2 Corporate Average Fuel Economy Standards

The USEPA and the NHTSA have been working together on developing a national program of regulations to reduce GHG emissions and to improve fuel economy of light-duty vehicles. The USEPA is finalizing the first-ever national GHG emissions standards under the CAA, and the NHTSA is finalizing Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. On April 1, 2010, the USEPA and NHTSA announced a joint Final Rulemaking that established standards for 2012 through 2016 model year vehicles. This was followed up on October 15, 2012, when the agencies issued a Final Rulemaking with standards for model years 2017 through 2025. The rules require these vehicles to meet an estimated combined average emissions level of 250 grams per mile by 2016, decreasing to an average industry fleet-wide level of 163 grams per mile in model year 2025. The 2016 standard is equivalent to 35.5 miles per gallon (mpg), and the 2025 standard is equivalent to 54.5 mpg if the levels were achieved solely through improvements in fuel efficiency. The agencies expect, however, that a portion of these improvements will be made through improvements in air conditioning leakage and the use of alternative refrigerants that would not contribute to fuel economy. These standards would cut GHG emissions by an estimated 2 billion metric tons (MT) and 4 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2017–2025). The combined USEPA GHG standards and NHTSA CAFE standards resolve previously conflicting requirements under both federal programs and the standards of the State of California and other states that have adopted the California standards (USEPA 2011; USEPA and NHTSA 2012).

3.2.3 Prevention of Significant Deterioration/Title V Greenhouse Gas Tailoring Rule

The USEPA will apply a tailored approach to the applicability major source thresholds for GHGs under the Prevention of Significant Deterioration (PSD) and Title V programs of the CAA by temporarily raising those thresholds and setting a PSD significance level for greenhouse gases. USEPA is anticipating that GHG emissions may soon be subject to regulation pursuant to

the CAA. One consequence of subjecting GHG emissions to regulatory controls is that the requirements of existing air permit programs, namely the PSD preconstruction permitting program for major stationary sources and the Title V operating permits program, would be triggered for GHG emission sources. At the current applicability levels under the CAA, tens of thousands of projects every year would need permits under the PSD program, and millions of sources would become subject to the Title V program. These numbers of permits are orders of magnitude greater than the current number of permits under these permitting programs and would vastly exceed the administrative capacity of the permitting authorities. By tailoring the applicability thresholds, actions can be taken by the USEPA and states to build capacity and streamline permitting.

3.3 California Greenhouse Gas Regulations

3.3.1 California Code of Regulations, Title 24, Part 6

California Code of Regulations (CCR) Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. Energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions.

The Title 24 standards are updated approximately every three years to allow consideration and possible incorporation of new energy efficiency technologies and methods. The latest update to the Title 24 standards occurred in 2013 and went into effect July 2014. This update increases energy efficiency requirements by 25 to 30 percent compared to the 2008 Title 24 standards. The next scheduled update in 2016 will continue to improve upon the current 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2016 Standards will go into effect on January 1, 2017 (CEC 2016).

3.3.2 California Code of Regulations, Title 24, Part 11, California Green Building Standards Code

The California Green Building Standards Code (CALGreen Code; 24 CCR, Part 11) is a code with mandatory requirements for new residential and nonresidential buildings (including buildings for retail, office, public schools, and hospitals) throughout California. The current version of the code went into effect on July 1, 2014, and includes energy efficiency updates resulting in energy usage reductions of 25 percent for residential buildings and 30 percent for nonresidential building (CEC 2012). The code is Part 11 of the California Building Standards Code in Title 24 of the CCR (CBSC 2014). Workshops are currently being held for the next triennial update of the CALGreen Code.

The development of the CALGreen Code is intended to (1) cause a reduction in GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impact during and after construction.

The CALGreen Code contains requirements for storm water control during construction; construction waste reduction; indoor water use reduction; material selection; natural resource conservation; site irrigation conservation; and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for the verification that all building systems, like heating and cooling equipment and lighting systems, are functioning at their maximum efficiency.

3.3.3 Executive Order S-3-05

On June 1, 2005, Executive Order (EO) S-3-05 proclaimed that California is vulnerable to climate change impacts. It declared that increased temperatures could reduce snowpack in the Sierra Nevada, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. In an effort to avoid or reduce climate change impacts, EO S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

3.3.4 Assembly Bill 32 – Global Warming Solutions Act of 2006

The California Global Warming Solutions Act of 2006, widely known as AB 32, requires that the CARB develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB is directed to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

3.3.5 Executive Order B-30-15

On April 29, 2015, EO B-30-15 established a California GHG reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG reduction targets with those of leading international governments, including the 28 nation European Union. California is on track to meet or exceed the target of reducing greenhouse gas emissions to 1990 levels by 2020, as established in AB 32. California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal established by EO S-3-05 of reducing emissions 80 percent under 1990 levels by 2050.

3.3.6 Senate Bill 32

As a follow up to AB 32 and in response to EO B-30-15, SB 32 was passed by the California legislature in August 2016 and signed by Governor Brown in September 2016 to codify the EO's California GHG reduction target of 40 percent below 1990 levels by 2030.

3.3.7 Assembly Bill 197

A condition of approval for SB 32 was the passage of AB 197. AB 197 requires that CARB consider the social costs of GHG emissions and prioritize direct reductions in GHG emissions at mobile sources and large stationary sources. AB 197 also gives the California legislature more oversight over CARB through the addition of two legislatively appointed members to the CARB

Board and the establishment a legislative committee to make recommendations about CARB programs to the legislature.

3.3.8 Assembly Bill 1493 – Vehicular Emissions of Greenhouse Gases

AB 1493 (Pavley) requires that CARB develop and adopt regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State." On September 24, 2009, CARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bind California's enforcement of AB 1493 (starting in 2009), while providing vehicle manufacturers with new compliance flexibility. The amendments also prepare California to merge its rules with the federal CAFE rules for passenger vehicles (CARB 2013). In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single packet of standards called Advanced Clean Cars (CARB 2013).

3.3.9 Assembly Bill 75

AB 75 was passed in 1999 and mandates state agencies to develop and implement an integrated waste management plan to reduce GHG emissions related to solid waste disposal and diversion (recycling). In addition, the bill mandates that community service districts providing solid waste services report the disposal and diversion information to the appropriate city, county, or regional jurisdiction. Since 2004, the bill requires diversion of at least 50 percent of the solid waste from landfills and transformation facilities, and submission to the California Integrated Waste Management Board of an annual report describing the diversion rates.

3.3.10 Assembly Bill 341

The State legislature enacted AB 341 (California Public Resource Code Section 42649.2), increasing the diversion target to 75 percent statewide. AB-341 requires all businesses and public entities that generate 4 cubic yards or more of waste per week to have a recycling program in place. In addition, multi-family apartments with five or more units are also required to implement a recycling program. The final regulation was approved by the Office of Administrative Law on May 7, 2012, and went into effect on July 1, 2012.

3.3.11 Executive Order S-01-07

This EO, signed by Governor Schwarzenegger on January 18, 2007, directs that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by the year 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and directs the CARB to determine whether a LCFS can be adopted as a discrete early action measure pursuant to AB 32. CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in April 2010. Although challenged in 2011, the Ninth Circuit reversed the District Court's opinion and rejected arguments that implementing LCFS violates the interstate commerce clause in September 2013. CARB is therefore continuing to implement the LCFS statewide.

3.3.12 Senate Bill 97 – CEQA: Greenhouse Gas Emissions

In August 2007, Governor Schwarzenegger signed into law SB 97 – CEQA: Greenhouse Gas Emissions, stating, "This bill advances a coordinated policy for reducing GHG emissions by directing the Office of Planning and Research (OPR) and the Resources Agency to develop CEQA guidelines on how state and local agencies should analyze, and when necessary, mitigate GHG emissions." Specifically, SB 97 requires the OPR to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, including but not limited to, effects associated with transportation or energy consumption. The Resources Agency certified and adopted the guidelines on December 31, 2009. The new CEQA guidelines provide the lead agency with broad discretion in determining what methodology is used in assessing the impacts of GHG emissions in the context of a particular project. This guidance is provided because the methodology for assessing GHG emissions is expected to evolve over time. The OPR guidance also states that the lead agency can rely on qualitative or other performance based standards for estimating the significance of GHG emissions, although the new CEQA Guidelines did not establish a threshold of significance.

3.3.13 Senate Bill 375

Senate Bill (SB) 375 aligns regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPOs) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPO's Regional Transportation Plan (RTP). Qualified projects consistent with an approved SCS or Alternative Planning Strategy categorized as "transit priority projects" would receive incentives to streamline CEQA processing.

3.4 <u>California Greenhouse Gas Programs and Plans</u>

3.4.1 California Air Resources Board: Scoping Plan

On December 11, 2008, the CARB adopted the Scoping Plan (CARB 2008b) as directed by AB 32. The Scoping Plan proposes a set of actions designed to reduce overall GHG emissions in California to the levels required by AB 32. Measures applicable to development projects include those related to energy-efficiency building and appliance standards, the use of renewable sources for electricity generation, regional transportation targets, and green building strategy. Relative to transportation, the Scoping Plan includes nine measures or recommended actions related to reducing vehicle miles traveled and vehicle GHGs through fuel and efficiency measures. These measures would be implemented statewide rather than on a project-by-project basis.

The CARB released the First Update to the Climate Change Scoping Plan in May 2014 to provide information on the development of measure-specific regulations and to adjust projections in consideration of the economic recession (CARB 2014a). To determine the amount of GHG emission reductions needed to achieve the goal of AB 32 (i.e., 1990 levels by 2020) CARB developed a forecast of the AB 32 Baseline 2020 emissions, which is an estimate of the emissions expected to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. CARB estimated the AB 32 Baseline 2020 to be 509 MMT

CO_2e. The Scoping Plan's current estimate of the necessary GHG emission reductions is 78 MMT CO_2e (CARB 2014b). This represents an approximately 15.32 percent reduction. The CARB is forecasting that this would be achieved through the following reductions by sector: 25 MMT CO_2e for energy; 23 MMT CO_2e for transportation; 5 MMT CO_2e for high-GWP GHGs, and 2 MMT CO_2e for waste. The remaining 23 MMT CO_2e would be achieved through Cap-and-Trade Program reductions. This reduction is flexible; if CARB receives new information and changes the other sectors' reductions to be less than expected, the agency can increase the Cap-and-Trade reduction (and vice versa).

3.5 Local Policies and Plans: County of San Diego

3.5.1 County of San Diego General Plan

The County General Plan, as updated in 2011, includes a plan to balance population growth and development with infrastructure needs and resource protection. The current General Plan is based on smart growth and land planning principles that will reduce VMT and, thus, result in a reduction of GHGs. This will be accomplished by locating future development within and near existing infrastructure. The General Plan includes a number of policies in the Conservation Element that encourage the design of new buildings that incorporate principles of sustainability and reduce vehicle and utility usage.

3.5.2 San Diego County Green Building Incentive Program

The County has a Green Building Incentive Program designed to promote the use of resource efficient construction materials, water conservation, and energy efficiency in new and remodeled residential and commercial buildings. The program offers incentives of reduced plan check turnaround time and a 7.5 percent reduction in plan check and building permit fees for projects meeting minimum program requirements, which include options for natural resource conservation, water conservation, and energy conservation.

3.5.3 County of San Diego Construction and Demolition Recycling Ordinance

The County has a construction and demolition recycling ordinance that is designed to divert debris from construction and demolition projects away from landfill disposal in the unincorporated County of San Diego. The ordinance requires that 90 percent of inerts and 70 percent of all other construction materials from a project be recycled. In order to comply with the ordinance, applicants must submit a Construction and Demolition Debris Management Plan and a fully refundable Performance Guarantee prior to building permit issuance.

3.5.4 San Diego Association of Governments: San Diego Forward: The Regional Plan

The Regional Plan (SANDAG 2015) is the long-range planning document developed to address the region's housing, economic, transportation, environmental, and overall quality-of-life needs. The Regional Plan establishes a planning framework and implementation actions that increase the region's sustainability and encourage "smart growth while preserving natural resources and limiting urban sprawl." The Regional Plan encourages the regions and the County to increase residential and employment concentrations in areas with the best existing and future transit

connections, and to preserve important open spaces. The focus is on implementation of basic smart growth principles designed to strengthen the integration of land use and transportation.

4.0 GUIDELINES FOR DETERMINING SIGNIFICANCE

The assessment of climate change impacts is by its nature a cumulative impact, as no individual project has the ability to affect the climate on a global scale. Based on Appendix G.VII of the State CEQA Guidelines, a project would have a significant environmental impact if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or

- Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

The County General Plan requires that the County adopt a Climate Action Plan (CAP) and thereafter a significance threshold based upon the CAP. At this time, the development of the CAP is being processed by the County under the supervision of a court pursuant to a judgment voiding a prior Climate Action Plan. The County General Plan does not contain policies prohibiting the County from adopting a non-CAP-based threshold prior to adoption of a court-approved CAP. At this time, the County has not adopted a threshold of significance for general use as part of its environmental review process via an ordinance, resolution, rule or regulation developed through public review process (See CEQA Guidelines section 15064.7(b).)

Accordingly, the determination of significance is governed by CEQA Guidelines 15064.4, entitled "Determining the Significance of Impacts from Greenhouse Gas Emissions." CEQA Guidelines 15064.4(a) states, "[t]he determination of the significance of greenhouse gas emissions calls for *a careful judgment by the lead agency consistent with the provisions in section 15064*. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, *in the context of a particular project*, whether to … [use a quantitative model or qualitative model]" (emphasis added). In turn, CEQA Guidelines 15064.4(b) clarifies that "[a]n iron clad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

Therefore, the analysis contained herein relies upon a threshold not based on the future County CAP and not based upon a threshold adopted by a public hearing process, but rather a threshold after the exercise of careful judgment about the setting of the project, believed to be appropriate in the context of this particular project.

"A project's contribution is less than cumulatively considerable if the project is required to implement…its fair share of a mitigation measure or measures designed to alleviate the cumulative impact" (CEQA Guidelines 15130(a)(3)). Measures to mitigate a project's GHG impacts broadly include "reductions in emissions resulting from a project though implementation of project features, project design, or other measures" and that such measures must have an

"essential nexus" and be "roughly proportionate" to the project (CEQA Guidelines 15126.4 (a)(4),(c)(2)). Finally, "[t]he mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable" (CEQA Guidelines 15064 (h)((4)).

Quantitative analysis is appropriate through the first year of full operation for a project. OPR's Technical Advisory on CEQA and Climate Change (OPR 2008) states, "As with any environmental impact, lead agencies must determine what constitutes a significant impact. In the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a "significant impact," individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice." The Sacramento Metropolitan Air Quality Management District (SMAQMD) recommended that project emissions be estimated for the first fully operational year (SMAQMD 2009). Operational emissions for projects are generally highest during the first year of operation and continue to decline in the future. Therefore, OPR's guidance coupled with guidance from the SMAQMD provides sufficient scientific evidence for using the buildout year to assess GHG emissions quantitatively.

One method for determining a fair share contribution quantitatively is to determine if the Project's per service person (i.e., residents and employees of the project) GHG efficiency level is more or less than the GHG efficiency level that would be needed for the state's estimated service population for each corresponding year, to achieve the state's 2020 GHG target set forth in AB 32 and the state's 2030 GHG target set forth in Executive Order (EO) B-30-15 recently codified in SB 32. California's 2020 GHG efficiency target is to reduce GHG emissions to 1990 levels by 2020. To develop an efficiency threshold that satisfies the requirements of AB 32, the California statewide 1990 land use emissions inventory is divided by the California statewide 2020 population and employment projection. Data used to develop this metric is shown in Table 4 below and Appendix G. Based on these data, the 2020 efficiency metric is 4.9 MT CO_2e/SP/year.

Table 4 2020 EFFICIENCY THRESHOLD METRIC	
CARB 1990 California GHG Inventory	
1990 Total Emissions (MMT CO_2e)	431
1990 Non-land Use Emissions (MMT CO_2e)	(144.3)
1990 Land Use Emissions (MMT CO_2e)	**286.7**
California 2020 Service Population	
2020 Population Projection*	40,619,346
2020 Employment Projection**	+ 18,511,200
2020 Service Population	**59,130,546**
Efficiency Metric	
1990 Land Use Emissions (MT CO_2e)	286,700,000
2020 Service Population	59,130,546
2020 Efficiency Metric (MT CO_2e/SP/year)	**4.9**

Sources:
*California Department of Finance, Demographic Research Unit Report P-2, State and County Population Projections by Race/Ethnicity and Age (5-year groups) 2010 through 2060 (as of July 1); December 15, 2014.
**California Department of Finance, Employment Development Department Industry Employment Projections, Labor Market Information Division, 2010-2020; May 23, 2012.

The 2030 GHG target set forth in EO B-30-15 and SB 32 is 40% below 1990 levels by 2030. Combined with the OPR Technical Advisory on CEQA and Climate Change (OPR 2008) guidance that quantitative analysis should be done up until the final year of build-out, a project provides a fair share contribution toward California's long-term GHG emissions targets if the GHG emissions per service person meet or exceed the efficiency rate needed in the project's build-out year for the State to stay on the path to meet its 2030 GHG reduction goal. CARB has indicated that an average statewide GHG reduction of 5.2 percent per year is necessary to achieve the 2030 emissions reduction goal of EO B-30-15 and SB 32 (CARB 2015). This metric is estimated by applying a uniform reduction from CARB's 1990 emissions inventory and dividing the resultant value by the projected statewide service population in 2021.

The impact significance determination in this report relies upon an efficiency threshold based on compliance with the California's target of reducing 2020 GHG emissions to 1990 levels, consistent with AB 32 and an interpolated efficiency metric for project buildout in 2021. The efficiency threshold, adjusted for anticipated Project buildout in 2021, is 4.6 MT CO_2e/SP/year, in keeping with the 2030 emissions reduction goal of EO B-30-15 and SB 32.

Project emissions take into account applicable standards and regulations that the Project would need to comply with for buildout in 2021. These include effects on vehicle emissions due to Pavley I, Pavley II, LCFS, effects on energy emissions due to energy code enforcements and the Renewable Portfolios Standard (RPS) (to 33 percent), and applicable County policies.

5.0 IMPACT ANALYSIS

Emission estimates were calculated for the three GHGs of primary concern (CO_2, CH_4, and N_2O) that would be emitted from Project construction and from the Project's five sources of operational emissions including on-road vehicular traffic, electricity generation, natural gas consumption, water usage, and solid waste disposal.

5.1 Methodology and Assumptions

Emissions calculations started with the following conservative land use assumption: The 239-acre Proposed Project would include the construction of 334 single-family residential units; 54 multi-family units; park and recreational uses; biological and agricultural open space; and an on-site WTWRF. Since preparation of the Traffic Impact Analysis (TIA) prepared in April 2014, the Proposed Project's residential units have been reduced from 334 single-family residential units to 326 single-family residential units for a decrease of eight units. The trip generation calculations provided in the TIA utilize the 334 single-family residential units, which represents a conservative analysis and this same number is utilized in this GHG report. The first construction phase focuses on overall site grading, the second phase includes infrastructure installation (utility pipelines, roadways, and the construction of the WTWRF), and the third phase addresses "vertical" development of the Project (residential building construction, asphalt paving, and architectural coating). Table 5 presents a summary of the land use designation, sizes and other metrics used for the California Emission Estimator Model (CalEEMod) (SCAQMD 2013).

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 Roadway Improvements	5,162	Linear Feet
Single-Family Residential (N 1& 5)	165	Dwelling Units
Multi-Family Residential (N 5)	20	Dwelling Units
General Light Industrial (WTWRF)	21,600	Square Feet
Single-Family Residential (N 2)	58	Dwelling Units
Multi-Family Residential (N 2)	23	Dwelling Units
Single-Family Residential (N 3)	35	Dwelling Units
Multi-Family Residential (N 3)	11	Dwelling Units
Single-Family Residential (N 4)	76	Dwelling Units

Note: N = Neighborhood

5.1.1 Vehicle Emission Assumptions

Vehicle emissions were estimated through a series of calculations based on the following equation derived from the CalEEMod computer models:

$$E = EF \times Fuel \times C \times GWP$$

Where:

E = emission in metric tons per year

EF = an emission factor normalized for engine fuel consumption and expressed in units of pounds of GHG per gallon of transportation fuel

$Fuel$ = the total quantity of fuel consumed per year

C = a constant reflecting the conversion of pounds to metric tons

GWP = the global warming potential of each GHG

CalEEMod is a computer model developed by a SCAQMD consultant with the input of several air quality management and pollution control districts to estimate criteria air pollutant emissions from various urban land uses (SCAQMD 2013). CalEEMod has the ability to calculate both mobile (i.e., vehicular) and some area source or stationary sources of emissions. It incorporates the two CARB off-road and on-road emissions models in its mobile emissions component and regional trip length and vehicle trip generation data from the participating air districts.

As allowed by the County, a reduction of 2.3 percent for Pavley II was applied to the CalEEMod results. CalEEMod already takes into account Pavley I and LCFS. See Appendix E for emission reduction adjustments.

5.1.2 Building Use Assumptions

Project buildout is anticipated to be in 2021; therefore it would be required to comply with the 2016 Title 24 Energy Code (which goes into effect January 1, 2017). It would also be required to comply with the 2013 CALGreen Building standards. It would accomplish this through enhanced HVAC systems and duct seals; enhanced ceiling, attic, and wall insulation; Energy Star appliances; high-efficiency water heaters; energy-efficient three-coat stucco exteriors; energy-efficient lighting; and high-efficiency window glazing.

Title 24 2016 includes standards to achieve a minimum 46 percent greater energy efficiency than Title 24 2008.[1] CalEEMod assumes compliance with Title 24 2008; therefore, in this analysis, estimates of energy emissions from the Project incorporates a 46 percent improvement in Title 24 energy use rates over 2008 energy code standards. It should be noted that the 46 percent

[1] Based on CEC's FAQs for the 2013 update, "The 2013 Standards will use 25% less energy for lighting, heating, cooling, ventilation, and water heating than the 2008 Standards" (CEC 2012). Based on the CEC's FAQs for the 2016 update, "Single family homes built to the 2016 standards will use about 28 percent less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards" (CEC 2016).
(1-25%) x (1-28%) = 54%: (1-54%) = 46%

reduction is only applied to the categories of energy consumption regulated by Title 24. As such, the actual reduction for the whole of the energy sources is less than 46 percent.

The analysis additionally incorporated an 11 percent reduction in energy associated GHGs due to implementation of the RPS beyond the already mandated 20 percent renewable energy mix requirement for electricity providers. This improved energy efficiency was incorporated into the Project emissions where appropriate.

5.1.3 WTWRF Assumptions

Certain GHG emissions from the WTWRF processes are considered to be biogenic. Carbon dioxide from the decomposition of human waste would be emitted into the atmosphere as part of the natural carbon cycle whether or not a wastewater treatment plant was on the Project site. Biogenic emissions are part of the natural carbon cycle, and do not contribute to climate change. Therefore, the GHG emissions associated with the WTWRF processes were calculated in the CalEEMod under the water category for this Project. Also, small amounts of GHGs are emitted through the use of back-up generators and electrical energy use embodied in the power grid to pump and convey the wastewater, and lightings and other electrical uses for the WTWRF facility. GHG emissions are calculated by multiplying the horsepower ratings and length of time of use in the generators to the emission factors (grams per hp-hour), and the amount of water (million gallons) by the electricity-use water factor (kWh per million gallons) by the carbon-intensity of the local utility (CO_2e per kWh).

5.1.4 Construction Assumptions

Construction activities emit GHGs primarily though the combustion of fuels (mostly diesel) in the engines of off-road construction equipment and through the combustion of diesel and gasoline in the on-road construction vehicles and in the commute vehicles of the construction workers. Smaller amounts of GHGs are also emitted through the energy use embodied in any water use (for fugitive dust control) and lighting for the construction activity. Every phase of the construction process, including grading, building, and paving emits GHG emissions, in volumes proportional to the quantity and type of construction equipment used. The heavier equipment typically emits more GHGs per hour of use than the lighter equipment because of their greater fuel consumption and engine design.

Emissions associated with the construction of the Proposed Project were calculated using the CalEEMod computer program, assuming that construction duration period would begin in March 2018 and last until September 2021.

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 2018 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 two years. 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 as supplied by the Project Applicant. For the Roadway Construction Model, the duration of construction activity was assumed to occur in 4.5 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	3/30/2018	5/10/2018	30
	Grading	5/11/2018	8/23/2018	75
	Drilling and Blasting	5/11/2018	6/21/2018	30
Neighborhood 2	Site Prep	9/17/2018	9/28/2018	10
	Grading	10/1/2018	11/9/2018	30
	Drilling and Blasting	10/1/2018	11/9/2018	30
Neighborhood 3	Site Prep	3/29/2018	4/11/2019	10
	Grading	4/12/2019	5/30/2019	35
	Drilling and Blasting	2/12/2019	3/25/2019	30
Neighborhood 4	Site Prep	9/16/2019	10/4/2019	15
	Grading	10/7/2019	12/6/2019	45
	Drilling and Blasting	10/7/2019	11/15/2019	30
Phase 2 – Infrastructure, Road Construction and WTWRF Installation				
Neighborhoods 1 & 5	Backbone Infrastructure	9/28/2018	1/31/2019	90
Wastewater Treatment and Water Reclamation Facility	Demolition	9/28/2018	10/11/2018	10
	Site Preparation	10/12/2018	10/16/2018	3
	Grading	10/17/2018	10/18/2018	2
	Building Construction	10/19/2018	3/7/2019	100
	Paving	3/8/2019	3/14/2019	5
	Arch. Paint	3/15/2019	3/21/2019	5
Road Construction	Grubbing/Land Clearing	3/22/2019	4/4/2019	10
	Grading/Excavation	4/5/2019	5/30/2019	40
	Drainage/Utilities	5/31/2019	7/11/2019	30
	Paving	7/12/2019	8/8/2019	20
Neighborhood 2	Backbone Infrastructure	3/25/2019	7/26/2019	90
Neighborhood 3	Backbone Infrastructure	9/16/2019	1/17/2020	90
Neighborhood 4	Backbone Infrastructure	3/25/2020	7/28/2020	90

Table 6 (cont.) ANTICIPATED CONSTRUCTION SCHEDULE				
Component	**Construction Activity**	**Construction Period**		
		Start	**End**	**Number of Working Days**
Phase 3 – Vertical Development				
Neighborhoods 1 & 5	Building Construction	2/15/2019	1/23/2020	245
	Paving	2/15/2019	1/23/2020	245
	Arch. Paint	5/17/2019	1/23/2020	180
Neighborhood 2	Building Construction	1/6/2020	5/8/2020	90
	Paving	1/6/2020	5/8/2020	90
	Arch. Paint	3/20/2020	15/7/2020	35
Neighborhood 3	Building Construction	4/6/2020	12/11/2020	180
	Paving	4/6/2020	12/11/2020	180
	Arch. Paint	6/29/2020	12/11/2020	120
Neighborhood 4	Building Construction	1/4/2021	9/10/2021	180
	Paving	1/4/2021	9/10/2021	180
	Arch. Paint	5/7/2021	9/10/2021	90

Note: 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.

Minor amounts of blasting may be required at the site during initial site preparation and grading activity on site. Blasting operations would be conducted through the use of drilling and blasting to fracture rocks. It is currently unknown the amount of blasting would occur however, it is assumed that approximately two to three blasting event 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 boreholes 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 is used to load off highway rock trucks for transport of fractured rock to the off-site aggregate processing plant.

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:

Pounds (lbs) PM_{10}/blast = $0.000014(A)^{1.5}$ x 0.52 lbs PM_{10}/lbs 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. Uncontrolled CO_2, CH_4, and N_2O emissions are calculated using the emission factors of 73.96 kg/MMBtu, $3x10^{-3}$ kg/MMBtu, and $6x10^{-4}$ 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 percent and a diesel heating value of 19,300 Btu/pound of diesel fuel were used to express the CO_2, CH_4, and N_2O emission factors in terms of lbs/ton of ANFO.

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 a pump station, 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.

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 six 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 of export for Mt. Whitney Road. Appendix B presents the Roadway Construction emission modeling output data.

The plan assumes that the residential neighborhoods would be constructed phase by phase; 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. It is unlikely that construction of more than two residential neighborhoods would occur at any one time, therefore to analyze worst-case emissions, it was assumed that Neighborhoods 1 and 5 would be occupied during the construction of Neighborhoods 2 and 3.

Construction emissions from the demolition and site grading, as well as the construction of the residences and WTWRF were calculated using CalEEMod version 2013.2.2 developed by SCAQMD.

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.

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. Table 7 presents a summary of the assumed equipment that would be involved in each stage of construction.

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 project applicant currently anticipates that construction would occur in 2018, 2019, 2020, and 2021, emission factors for OFFROAD equipment for scenario years 2018, 2019, 2020, and 2021 were used.

All construction equipment operating on the Project site would 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 7
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 7 (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 Building construction would require different amounts of equipment to complete construction within the scheduled time. To remain conservative, the component with the highest number of equipment needed was used for this table.

5.2 Construction Emissions

Table 8 presents a summary of the GHG emissions resulting from construction activities by phase. Attachment A contains the CalEEMod output file for the Proposed Project construction, and provides a detailed breakdown of the calculations.

Table 8
ESTIMATED CONSTRUCTION EMISSIONS

Phase	CO_2e (MT/yr)
Site Preparation, Grading, and Blasting	691
Backbone Infrastructure	669
WTWRF	73
Road Construction	174
Vertical Development	3,359
TOTAL CONSTRUCTION GHG EMISSIONS	**4,966**

The Project-related construction activities are estimated to generate approximately 4,966 MT of CO_2e emissions. For construction emissions, the County recommends that the emissions be amortized over 20 years and added to operational emissions, as appropriate. Amortized over 20 years, construction equipment would contribute 248 MT per year of CO_2e emissions to the Project's total. These emissions are added to the expected annual operational GHG emissions below.

5.3 Project Emissions

Operational sources of GHG emissions include: (1) vehicle use; (2) energy use (electricity and natural gas) and area sources (landscaping equipment; (3) solid waste generation; and (4) water conveyance and treatment.

5.3.1 Vehicle Emissions

The Project would generate 3,786 average daily trips (ADT) (Linscott, Law & Greenspan Engineers [LLG] 2015). CalEEMod assumed an annual total of 9,744,642 miles would be traveled each year by Project residents, visitors to the public neighborhood park, and WTWRF workers. This total annual VMT was based on the average trip length calculated for this Project which was 7.05 miles per trip (LLG 2016; see Appendix H). Trip rates were based on the Traffic Impact Analysis, which estimated 10 daily trips per DU for Neighborhoods 1, 2, 4, and 48 units in 5; 12 daily trips per DU for Neighborhoods 3 and the remaining units in 5; a total of 324 daily trips from multi-generational second units in neighborhoods 2, 3, and 5; and 10 total daily trips for the WTWRF (associated with hauling of sludge, screenings, and grit, delivery of chemicals, delivery of recycled water, as well as facility maintenance, management, and supervision of the site). The Project would result in vehicle-related emissions of 3,577 MT CO_2e annually.

5.3.2 Area Source Emissions

Area sources included emissions from residential fireplaces (i.e., hearths), landscaping equipment, architectural coatings, and household consumer products. GHG emissions associated with area sources were estimated using the CalEEMod default values for the Proposed Project.

5.3.3 Energy Emissions

Buildings use electricity for lighting, heating and cooling. Electricity generation entails the combustion of fossil fuels, including natural gas and coal, which are then stored and transported to end users. A building's electricity use is thus associated with the off-site or indirect emission of GHGs at the source of electricity generation (power plant). Due to the nature of the electrical grid, it is not possible to say with certainty where energy consumed will be generated. Therefore, GHG emissions resulting from electricity generation were estimated using the CalEEMod default values for the San Diego Gas and Electric (SDG&E) region. The electricity energy use is in kilowatt-hours per size metric for each land use subtype and natural gas use is in kiloBritish Thermal Units (kBTU) per size metric for each land use subtype. The CalEEMod model default values are based on the CEC-sponsored California Commercial End Use Survey (CEUS) and Residential Appliance Saturation Survey (RASS) studies (SCAQMD 2013).

The Proposed Project would comply with the 2016 California Title 24 Energy Code (which goes into effect on January 1, 2017). These standards exceed the current 2013 efficiency standards by 28 percent. The following energy efficient items are planned for the housing development: improved HVAC systems and duct seals; enhanced ceiling, attic and wall insulation; Energy Star appliances; high-efficiency water heaters; energy-efficient three-coat stucco exteriors; energy-efficient lighting; and high-efficiency window glazing.

Prewiring for Electric Vehicle Charging Devices. The residential units would be prewired with sufficient electrical capacity and appropriate circuitry in proximity to vehicle parking areas and/or garages, to support residential electric vehicle charging stations.

Renewable Energy. The Project would also include the use of renewable energy which would provide 100 percent of residential electricity needs per planning area (Neighborhoods 1-5). Renewable energy would be provided through renewable sources to include, but not be limited to, rooftop solar or enrollment in SDG&E's SunRate, or equivalent, renewables program. Using renewable energy displaces electricity demand which would ordinarily be supplied by the local utility. Since zero GHG emissions are associated with renewable energy, the GHG emissions reductions from this measure are equivalent to the emissions that would have been produced had electricity been supplied by the local utility.

With the implementation of energy-reducing project design features, the Project would result in the indirect emission of 396 MT CO_2e annually from energy usage.

5.3.4 Water Use and Wastewater Treatment Emissions

The provision of potable water consumes large amounts of energy associated with source and conveyance, treatment, distribution, end use, and wastewater treatment. This type of energy use is known as embodied energy. The electricity intensities are multiplied by the utility intensity

factors for the GHGs and are classified as indirect emissions. The default electricity intensity is from the CEC's 2006 Refining Estimates of Water-Related Energy Use in California using the average values for Northern and Southern California. The GHG emissions associated with water use are calculated by multiplying the embodied energy in a gallon of potable water by the total number of gallons projected to be consumed by the Project and then by the electricity generation GHG emissions factors.

The amount of wastewater generated by the Proposed Project would emit CH_4 and N_2O emissions. Biogenic GHG emissions are generated from both aerobic and anaerobic processes, as well as from the combustion of digester gas, but CalEEMod only calculates combustion emissions from digester gas because there are currently no authoritative emission factors for process CO_2 emissions. The GHG emissions associated with the WTWRF process and potable water conveyance are provided together in this water usage category.

The Proposed Project would produce tertiary filtered effluent that meets Title 22 standards for disinfected secondary recycled water, which could be used for end uses in the Rincon Municipal Water District for landscape irrigation. In general, the use of recycled water instead of potable water uses less energy in the long term, relative to alternative water sources such as imported water and desalinated water.

Imported water delivered through the state water project (SWP) consumes a substantial amount of energy to convey water to southern California from the Colorado River in Arizona/Nevada or Sacramento-San Joaquin River Delta in northern California. A recent study by California Regional Water Control Board has shown that the energy required to import water is over six times the energy requirement for Title 22 recycled water when considering kilowatt-hours per acre-foot. In addition, the same study indicates that Title 22 recycled water produces 338 tons of CO_2 for every 1,000 acre-foot of water produced, while the SWP produces 2,250 tons of CO_2 for every 1,000 acre-foot of water imported (West Basin 2007; USEPA 1995). Based on this analysis, the Proposed Project would reduce the relative amount of GHG emissions produced for every acre-foot of recycled water provided by the WTWRF to offset potable imported water and would be considered to be inherently energy efficient in this respect.

Additionally, Project water emissions were adjusted to account for the recent 2013 CALGreen mandate to reduce water consumption by up to 20 percent. The Project would meet this reduction with the installation of low flow water features. With the discussed water conservation measures, the Project would result in 124 MT CO_2e per year.

5.3.5 Solid Waste Emissions

The disposal of solid waste produces GHG emissions from anaerobic decomposition in landfills, incineration, and transportation of waste. For the Project calculations, a countywide average waste disposal rate was used and was obtained from the California Department of Resources Recycling and Recovery (CalRecycle). This analysis assumes that the countywide average already accounts for the 50 percent diversion requirement from AB 75, considering that the County has been meeting its goals.

In 2012, the State legislature enacted AB 341, increasing the diversion target to 75 percent statewide by 2020. Therefore, a 25 percent diversion rate over the countywide average was applied to the Project in this analysis. This would result in the emission of 145 MT CO_2e annually from solid waste. In addition, the Proposed Project would implement lumber and other materials conservation during construction (as part of the California Green Builder Program) and prepare a Construction and Demolition Debris Management Plan that requires 90 percent of inerts and 70 percent of all other materials to be recycled during construction, in compliance with the County's Municipal Code.

5.3.6 Emissions Associated with Off-road Equipment

The Project would include the use of off-road equipment during operations. This equipment consists of two generators; one would be needed at the WTWRF and one would be needed for the fire pump station. GHG emissions associated with this off-road equipment are included in this analysis.

5.3.7 Summary

Table 9 includes the annual emissions for the Project (including the WTWRF). The emissions include the amortized annual construction emissions anticipated for the Project. Attachment D contains the Operational CalEEMod output files for the Proposed Project. As shown in Table 9, the Project would result in GHG emissions of 4,741 MT CO_2e per year.

Table 9
ESTIMATED OPERATIONAL EMISSIONS WITH PROJECT DESIGN FEATURES AND STATE MANDATED MEASURES

Source	CO_2	CH_4	N_2O	CO_2e
	MT/yr			
Residential Development				
Area	241	0.01	0.00	243
Energy	334	0.01	0.01	336
Mobile	3,564	0.13	-	3,567
Solid Waste	63	3.75	-	142
Water Usage (including Wastewater Treatment)	91	0.41	0.01	103
Residential Subtotal	*4,294*	*4.31*	*0.02*	*4,391*

Table 9 (cont.) ESTIMATED OPERATIONAL EMISSIONS WITH PROJECT DESIGN FEATURES AND STATE MANDATED MEASURES				
Source	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
	MT/yr			
Wastewater Treatment and Water Reclamation Facility				
Area	0	0.00	0.00	0
Energy	60	0.00	0.00	60
Mobile	11	0.00	-	11
Solid Waste	1	0.08	-	3
Water Usage	18	0.13	0.00	21
Off-road Equipment	7	0.00	-	7
WTWRF Subtotal	*97*	*0.21*	*0.00*	*102*
Total Operations	***4,390***	***4.52***	***0.02***	***4,493***
Amortized Construction	***245***	***0.06***	***0.01***	***248***
TOTAL[a]	**4,636**	**4.58**	**0.03**	**4,741**

Source: HELIX 2016 – Operational CalEEMod results are provided in Appendix D
Note: Emissions for the following sources were adjusted to include state-mandated reductions (as described above and in Appendix E of this report): energy, mobile, and water.
[a] Totals may not add due to rounding.

5.4 Significance of Impacts

As detailed in Section 4.0, the efficiency threshold for the year 2020 is 4.9 MT CO_2e/SP/year, and assuming a 5.2 percent reduction for each year following 2020, the 2021 threshold (Project buildout) is 4.6 MT CO_2e/SP/year. As detailed in the Project EIR, on average, 2.92 residents will reside in each single-family dwelling unit. It was further assumed that one resident will reside in each Second Dwelling Unit, for a total service population of 1,029 persons. As shown in Table 10, at full buildout the Proposed Project would result in emissions of 4.6 MT/SP/year. Therefore, the Project would result in less than significant GHG impacts.

Table 10 GHG EMISSIONS SIGNIFICANCE DETERMINATION	
Category	**Value**
Total Project Emissions (MT CO_2e)	4,741
Project Service Population (residents)	1,029
Project Emissions per Service Population (MT CO2e/SP/year)	**4.6**
2020 Efficiency Threshold (MT CO_2e/SP/year)	4.9
2021 Efficiency Threshold (MT CO_2e/SP/year)	4.6
Significant Impact?	**No**

Source: CalEEMod (output data is provided in Appendix D)

6.0 PROJECT CONSISTENCY WITH ADOPTED PLANS, POLICIES, AND REGULATIONS

The regulatory plans and policies discussed extensively in Section 3.0 above aim to reduce national, state, and local GHG emissions by primarily targeting the largest emitters of GHGs: the transportation and energy sectors. Plan goals and regulatory standards are thus largely focused on the automobile industry and public utilities. For the transportation sector, the reduction strategy is generally three-pronged: to reduce GHG emissions from vehicles by improving engine design; to reduce the carbon content of transportation fuels through research, funding, and incentives to fuel suppliers; and to reduce the miles these vehicles travel through land use change and infrastructure investments. For the energy sector, the reduction strategies aim to reduce energy demand; impose emission caps on energy providers; establish minimum building energy and green building standards; transition to renewable non-fossil fuels; incentivize homeowners and builders; fully recover landfill gas for energy; expand research and development; and so forth.

6.1 State Plans

EO S-3-05 established GHG emission reduction targets for the state, and AB 32 launched the Climate Change Scoping Plan that outlined the reduction measures needed to reach these targets. The Project, by achieving 4.6 MT CO_2e/SP/year efficiency threshold, would be considered consistent with the AB 32's 2020 reduction target, and on track for meeting EO S-3-05's reduction target. See also Appendix I.

6.2 Local Plans

As discussed above in Section 1, the Project would achieve some GHG reductions through green building design that includes improved energy efficiency, water conservation, sustainable materials use, and waste reduction. Verification and commissioning of these features would occur through independent third-party inspection and diagnostics.

As a condition of building permit approval, however, the Proposed Project is required to comply with 2016 Title 24 standards (which surpass the 2013 Title 24 Energy Efficiency Standards by 28 percent), reduce indoor water consumption by up to 20 percent, and have 100 percent of residential electricity generated by renewable sources. Verification of increased water and energy efficiencies will be demonstrated based on a performance approach, using a CEC-approved water and energy compliance software program, in the Title 24 Compliance Reports provided by the Project applicant to the County prior to issuance of the building permit.

The Project would result in a 4.6 MT CO_2e/SP/year efficiency threshold, which would be consistent with statewide GHG reduction targets established by AB 32 and EO S-3-05. The Project's consistency with specific General Plan Conservation Element policies is analyzed in Table 11.

Table 11 COUNTY GENERAL PLAN POLICIES	
Policy	**Project Consistency**
COS14.3 Sustainable Development. Require design of residential subdivisions and nonresidential development through "green" and sustainable land development practices to conserve energy, water, open space, and natural resources.	*Consistent*. As discussed in the Project description (Section 1.4 of this report), the Project includes many design features to reduce energy and water use.
COS14.7 Alternative Energy Sources for Development Projects. Encourage development projects that use energy recovery, photovoltaic, and wind energy.	*Consistent*. The Project proposes to supply 100 percent of residential electricity needs through renewable sources per planning area (Neighborhoods 1-5).
COS14.10 Low Emission Construction Vehicles and Equipment. Require County contractors and encourage other developers to use low-emission construction vehicles and equipment to improve air quality and reduce GHG emissions.	*Consistent*. All Project-related construction equipment would be required to meet USEPA-Certified Tier 4 emissions standards.
COS15.1 Design and Construction of New Buildings. Require that new buildings be designed and constructed in accordance with "green building" programs that incorporate techniques and materials that maximize energy efficiency, incorporate the use of sustainable resources and recycled materials, and reduce emissions of GHGs and toxic air contaminants.	*Consistent*. The Project proposes sustainability and efficiency features consistent with the 2013 CALGreen Building Code.
COS15.4 Title 24 Energy Standards. Require development to minimize energy impacts from new buildings in accordance with or exceeding Title 24 energy standards.	*Consistent*. The Project proposes implementing energy efficiency features that would meet 2016 Title 24 standards, which is 46 percent more efficient than the 2008 Title 24 requirements that were current when the General Plan was adopted, and will be eligible for the County's Green Building Incentive Program.
COS17.1 Reduction of Solid Waste Materials. Reduce GHG emissions and future landfill capacity needs through reduction, reuse, or recycling of all types of solid waste that is generated. Divert solid waste from landfills in compliance with State law.	*Consistent*. The Project would minimize waste by incorporating recycled materials for flooring, and certified sustainable wood products and other recycled or rapidly renewable building materials where possible. Areas for storage and collection of recyclables and yard waste would also be provided for each residence.
COS17.2 Construction and Demolition Waste. Require recycling, reduction and reuse of construction and demolition debris.	*Consistent*. The Project would prepare a Construction Debris Management Plan that complies with Section 68.508-68.518 of the County Municipal Code, and would divert at least 90 percent of inerts and 70 percent of construction waste from landfills through reuse and recycling.

Table 11 (cont.) COUNTY GENERAL PLAN POLICIES	
Policy	**Project Consistency**
COS17.6 Recycling Containers. Require that all new land development projects include space for recycling containers.	*Consistent*. The Project would provide areas for storage and collection of recyclables and yard waste.
COS19.1 Sustainable Development Practices. Require land development, building design, landscaping, and operational practices that minimize water consumption.	*Consistent*. The Project proposes implementing water conservation strategies to reduce water usage by installing low-flow water features.

7.0 RESIDUAL IMPACTS AND CONCLUSIONS

As summarized in Table 10, implementation of the Project including design features would result in a 4.6 MT CO_2e/SP/year efficiency, which would meet both the 2020 and 2021 thresholds being applied to this analysis (4.9 MT CO_2e/SP/year and 4.6 MT CO_2e/SP/year, respectively). The Project would be consistent with the programs CARB has identified for keeping the state on track to meet its GHG emissions targets and the policies within the General Plan intended for the reduction of GHGs. Therefore, the Proposed Project GHG emission impacts would be less than significant.

8.0 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 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 the off-site wastewater treatment facility.

If one of these options is chosen, the Project will not result in the emissions reported for the WTWRF in Tables 8 and 9. Due to the overall reduced emissions profile, the project design feature calling for 100 percent would be replaced with the following:

> Renewable energy would supply a minimum of 80 percent of the residential electricity needs per planning area (Neighborhoods 1-5), which may include, but not be limited to, rooftop solar or mandatory continued enrollment in SDG&E's SunRate, or equivalent, renewables program.

With the elimination of the WTWRF and the reduction of the renewable energy requirement, the emissions associated with the residential development are presented in Table 12, *Estimated Residential Operational Emissions*, below.

Table 12 ESTIMATED RESIDENTIAL OPERATIONAL EMISSIONS				
Source	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
	MT/yr			
Residential Development				
Area	241	0.01	0.00	243
Energy	474	0.01	0.01	477
Mobile	3,564	0.13	-	3,567
Solid Waste	63	3.75	-	142
Water Usage (including Wastewater Treatment)	91	0.41	0.01	103
Operational Subtotal	*4,434*	*4.31*	*0.02*	*4,531*
Amortized Construction	*242*	*0.06*	*0.01*	*245*
TOTAL[a]	**4,676**	**4.37**	**0.03**	**4,777**

Source: HELIX 2016 – Operational CalEEMod results are provided in Appendix D
Note: Emissions for the following sources were adjusted to include state-mandated reductions (as described above and in Appendix E of this report): energy, mobile, and water.
[a] Totals may not add due to rounding.

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, PM_{10}, 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 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.

8.1 Option 1: Connection to the City of Escondido Hale Avenue Resource Recovery Facility

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 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.

The off-site pipeline-related construction activities are estimated to generate approximately 18 MT of CO_2e emissions. For construction emissions, the County recommends that the emissions be amortized over 20 years and added to operational emissions, as appropriate. Amortized over 20 years, construction equipment would contribute 0.91 MT per year of CO_2e emissions to this option's total. These emissions are added to the expected annual operational GHG emissions presented in Table 12. As shown in Table 13, the Proposed Project with off-site wastewater pipeline option 1 and a reduced renewables portfolio requiring only 80 percent of the residential electricity needs be met by renewable sources would result in 4.6 MT CO_2e/SP/year, consistent with AB 32, EO B-30-15, and SB 32. In accordance with this threshold, impacts would not be significant.

Table 13 GHG EMISSIONS SIGNIFICANCE DETERMINATION – OFF-SITE WASTEWATER PIPELINE OPTION 1	
Category	**Value**
Total Project Emissions (MT CO_2e)	4,778
Project Service Population (residents)	1,029
Project Emissions per Service Population (MT CO2e/SP/year)	**4.6**
2020 Efficiency Threshold (MT CO_2e/SP/year)	4.9
2021 Efficiency Threshold (MT CO_2e/SP/year)	4.6
Significant Impact?	**No**

Source: CalEEMod (output data is provided in Appendix D)

8.2 Option 2: Connection to Vallecitos Water District Facilities (via Annexation into the VWD for Sewer Service Only)

This 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 which 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

The off-site pipeline-related construction activities are estimated to generate approximately 14 MT of CO_2e emissions. Amortized over 20 years, construction equipment would contribute 0.72 MT per year of CO_2e emissions to this option's total. These emissions are added to the expected annual operational GHG emissions presented in Table 12. As shown in Table 14, the Proposed Project with off-site wastewater pipeline option 2 and a reduced renewables portfolio requiring only 80 percent of the residential electricity needs be met by renewable sources would result in 4.6 MT CO_2e/SP/year, consistent with AB 32, EO B-30-15 and SB 32. In accordance with this threshold, impacts would not be significant.

Table 14
GHG EMISSIONS SIGNIFICANCE DETERMINATION – OFF-SITE WASTEWATER PIPELINE OPTION 2

Category	Value
Total Project Emissions (MT CO_2e)	4,778
Project Service Population (residents)	1,029
Project Emissions per Service Population (MT CO2e/SP/year)	**4.6**
2020 Efficiency Threshold (MT CO_2e/SP/year)	4.9
2021 Efficiency Threshold (MT CO_2e/SP/year)	4.6
Significant Impact?	**No**

Source: CalEEMod (output data is provided in Appendix D)

8.3 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 WTWRF design criteria and potentially re-rating the design flow at the WTWRF to include the Project's sewer flows.

The off-site pipeline-related construction activities are estimated to generate approximately 21 MT of CO_2e emissions. Amortized over 20 years, construction equipment would contribute 1.1 MT per year of CO_2e emissions to this option's total. These emissions are added to the expected annual operational GHG emissions presented in Table 12. As shown in Table 15, the Proposed Project with off-site wastewater pipeline option 3 and a reduced renewables portfolio requiring only 80 percent of the residential electricity needs be met by renewable sources would result in 4.6 MT CO_2e/SP/year, consistent with AB 32, EO B-30-15, and SB 32. In accordance with this threshold, impacts would not be significant.

Table 15 GHG EMISSIONS SIGNIFICANCE DETERMINATION – OFF-SITE WASTEWATER PIPELINE OPTION 3	
Category	**Value**
Total Project Emissions (MT CO_2e)	4,778
Project Service Population (residents)	1,029
Project Emissions per Service Population (MT CO2e/SP/year)	**4.6**
2020 Efficiency Threshold (MT CO_2e/SP/year)	4.9
2021 Efficiency Threshold (MT CO_2e/SP/year)	4.6
Significant Impact?	**No**

Source: CalEEMod (output data is provided in Appendix D)

9.0 REFERENCES

American Petroleum Institute (API). 2004. API Compendium of GHG Emissions Estimation Methodologies for the Oil and Gas Industry.

Association of Environmental Professionals (AEP). 2007 (June). Recommendations by the Association of Environmental Professionals (AEP) on How to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents.

California Air Pollution Control Officers Association (CAPCOA). 2010 (August). Quantifying Greenhouse Gas Mitigation Measures, Available at: http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf.

California Air Resources Board (CARB). 2015. 2030 Target Scoping Plan Update (presentation dated October 1, 2015). November 19. Available at: http://www.arb.ca.gov/board/books/2015/111915/15-9-5pres.pdf.

2014a First Update to the AB 32 Scoping Plan. May 14. Available at: http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm

2014b California Greenhouse Gas Inventory Program (last update December 22). Available at: http://www.arb.ca.gov/cc/inventory/inventory.htm.

2013 Clean Car Standards – Pavley, Assembly Bill 1493. Accessed September 2014. Available at: http://www.arb.ca.gov/cc/ccms/ccms.htm

2012 Mobile Source Emissions Inventory Model (EMFAC2011). Available at: http://www.arb.ca.gov/msei/modeling.htm

2011 OFFROAD2011 Emission Factors.

2010 Greenhouse Gas Inventory Data – 2000 to 2008 (last update May 12, 2010). Available at: http://www.arb.ca.gov/cc/inventory/data/data.htm.

2008a Preliminary Draft Staff Proposal: Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act, October 24, 2008. Available at: http://www.arb.ca.gov/cc/localgov/ceqa/ceqa.htm.

2008b AB 32 Climate Change Scoping Plan Document. December. Available at: http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm.

2007a Staff Report: California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit. November 16.

California Air Resources Board (CARB) (cont.)

2007b California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit. November 16.

2007c Climate Change: Information Regarding ARB's Climate Change Program Pursuant to 2006 Assembly Bill 32. Available at: http://www.arb.ca.gov/cc/cc.htm.

2007d Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration. October.

2006 Public Workshop to Discuss Establishing the 1990 Emission Level and the California 2020 Limit and Developing Regulations to Require Reporting of Greenhouse Gas Emissions, Sacramento, CA. December 1.

California Building Standards Commission (CBSC). 2014. Adopted 2013 Code, Triennial California Building Standards Commission (CBSC). Adopted 2013 Code, Triennial Edition. Sacramento, CA: CBSC. Available at: http://www.bsc.ca.gov/

California Department of Finance, Demographic Research Unit Report P-2, State and County Population Projections by Race/Ethnicity and Age (5-year groups) 2010 through 2060 (as of July 1); December 15, 2014. Available at: http://www.dof.ca.gov/research/demographic/projections/.

California Department of Finance, Employment Development Department Industry Employment Projections, Labor Market Information Division, 2010-2020; May 23, 2012. Available at: http://www.labormarketinfo.edd.ca.gov/data/employment-projections.html.

California Energy Commission (CEC). 2016. 2016 Building Energy Efficiency Standards. Available at: http://www.energy.ca.gov/title24/2016standards/.

2012 News Release – Energy Commission Approves More Efficient Buildings for California's Future. Sacramento, CA: CEC. May 31. Available at: http://www.energy.ca.gov/releases/2012_releases/2012-05-31_energy_commission_approves_more_efficient_buildings_nr.html

2006 Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004. December.

California Natural Resources Agency (CNRA). 2009. California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008. Available at: http://resources.ca.gov/climate_adaptation/docs/Statewide_Adaptation_Strategy.pdf.

CalRecycle (California Department of Resources Recycling and Recovery). 2010. Solid Waste Characterization: Guidelines for Preparation of Environmental Assessment for Solid Waste Management.

2009 Estimated Solid Waste Generation Rates for Residential and Commercial Establishments. Updated December 30. Available at: http://www.calrecycle.ca.gov/wastechar/wastegenrates.

2008 Statewide Waste Characterization Study. Contractors Report to the California Integrated Waste Management Board. April.

County of San Diego. Strategic Energy Plan. Available at: http://sustainca.org/sites/default/files/County_of_San_Diego_2009_Strategic_Energy_Plan.pdf .

Fox, C., Henzie, B., Tryon, P., and Ortiz, V. 2016. Personal Communication. August 2.

Governor's Office of Planning and Research (OPR). 2008. Technical Advisory – CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act Review. June 19. Available at: https://www.opr.ca.gov/docs/june08-ceqa.pdf

Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007: The Physical Science Basis, Summary for Policy Makers (Working Group Fourth Assessment Report). February. Available at: http://www.ipcc.ch/SPM2feb07.pdf.

Krause, Melissa. 2013. Personal communication with Julie McCall of HELIX Environmental Planning. February.

Linscott, Law & Greenspan (LLG) Engineers. 2016. Valiano Traffic Study – Average Trip Length. May.

2015 Traffic Impact Analysis – Valiano. March.

Marten Law Group. 2008. California Sues EPA over Vehicle Emissions Standards. Available at: http://www.martenlaw.com/news/?20080109-calif-sues-epa.

Sacramento Metropolitan Air Quality Management District (SMAQMD). 2009 (as amended through 2016). Guide to Air Quality Assessment in Sacramento County. Available at: http://www.airquality.org/businesses/ceqa-land-use-planning/ceqa-guidance-tools

San Diego Association of Governments (SANDAG). 2015. San Diego Forward: The Regional Plan. October. Available at: http://www.sdforward.com/pdfs/RP_final/The%20Plan%20-%20combined.pdf

2010 Climate Action Strategy. Preliminary Draft. February 1. Available at: http://www.sandag.org/uploads/publicationid/publicationid_1481_10940.pdf.

San Diego Association of Governments (SANDAG) (cont.)

2008 2030 Regional Growth Forecast Update: Process and Model Documentation. April. Available at: http://www.sandag.org/uploads/publicationid/publicationid_833_3750.pdf.

South Coast Air Quality Management District (SCAQMD). 2013. California Emission Estimator Model (CalEEMod). (Released October 2013). Prepared by ENVIRON under contract with South Coast Air Quality Management District. Version 2013.2.2. Available at: http://www.aqmd.gov/caleemod/default.htm.

United Nations Environment Programme. 2007a. Scientific Assessment of Ozone Depletion: 2006. Pursuant to Article 6 of the Montreal Protocol on Substances that Deplete the Ozone Layer. February.

2007b Achievements in Stratospheric Ozone Protection, the Montreal Protocol on Substances that Deplete the Ozone Layer, Progress Report 1987–2007. Available at: http://ozone.unep.org/Publications/MP_Acheivements-E.pdf

United Nations Framework Convention on Climate Change (UNFCCC). 2009 Status of Ratification. Available at: http://unfccc.int/kyoto_protocol/background/status_of_ratification/items/2613.php.

2007a The United Nations Framework Convention on Climate Change. Available at: http://unfccc.int/essential_background/convention/items/2627.php.

2007b Kyoto Protocol. Available at: http://unfccc.int/kyoto_protocol/items/2830.php.

2006a Greenhouse Gas Emissions Data, Predefined Queries, Annex I Parties – GHG total without LULUCF (land-use, land-use change and forestry). Available at http://unfccc.int/ghg_emissions_data/predefined_queries/items/3841.php.

2006b Kyoto Protocol Third Session of the Conference of the Parties (COP) to the UNFCCC.

United States Environmental Protection Agency (USEPA). 2011 (November 22, last update). Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Clean Air Act. Washington, D.C.: USEPA. Available at: http://www.epa.gov/climatechange/endangerment/

United States Environmental Protection Agency (USEPA) (cont.)

2010 Inventory of Greenhouse Gas Emissions and Sinks: 1990 to 2008. U.S. EPA #430-R-10-066. http://epa.gov/climatechange/emissions/usinventoryreport.html.

2006 The U.S. Inventory of Greenhouse Gas Emissions and Sinks: Fast Facts. Available at: www.epa.gov/climatechange/emissions/downloads06/06FastFacts.pdf.

1995 Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Source. January.

University of San Diego School of Law Energy Policy Initiative Center (EPIC). 2008. Anders, S., D. De Haan, N. Silva-Send, S. Tanaka, and L. Tyner. San Diego County Greenhouse Gas Inventory: An Inventory of Regional Emissions and Strategies to Achieve AB 32 Targets. September. Available at http://www.sandiego.edu/epic/ghginventory.

West Basin Municipal Water District. 2007. Analysis of the Energy Intensity of Water Supplies for West Basin Municipal Water District. Prepared by Robert C. Wilkinson, PhD. March.

10.0 LIST OF PREPARERS AND PERSONS AND ORGANIZATIONS CONTACTED

Preparers:

Victor Ortiz, Air Quality Specialist
Amy Mila de la Roca, Air Quality Analyst
Joanne M. Dramko, AICP, County-Approved Air Quality Consultant

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

Contacts:

County of San Diego
Planning & Development Services
5510 Overland Avenue, Suite 310
San Diego, CA 92123

Appendix A

CALEEMOD CONSTRUCTION EMISSION DATA

Valiano - Grading (Phase 1 - N 1 & 5)

San Diego County, Annual

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 -

Architectural Coating -

Vehicle Trips - Construction only.

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle 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 -

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	75.00
tblConstructionPhase	NumDays	40.00	30.00
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	90.75	0.00

tblFireplaces	NumberNoFireplace	16.50	15.40
tblFireplaces	NumberWood	57.75	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.09	0.00
tblSolidWaste	SolidWasteGenerationRate	193.52	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	10,750,414.23	0.00
tblWater	OutdoorWaterUseRate	1,191,481.35	0.00
tblWater	OutdoorWaterUseRate	6,777,435.06	0.00
tblWoodstoves	NumberCatalytic	8.25	0.00
tblWoodstoves	NumberNoncatalytic	8.25	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018											0.0000	272.0204	272.0204	0.0828	0.0000	273.7600
Total											**0.0000**	**272.0204**	**272.0204**	**0.0828**	**0.0000**	**273.7600**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018											0.0000	272.0201	272.0201	0.0828	0.0000	273.7597
Total											**0.0000**	**272.0201**	**272.0201**	**0.0828**	**0.0000**	**273.7597**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**2.0013**	**2.0013**	**1.9500e-003**	**0.0000**	**2.0423**

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	tons/yr										MT/yr					
Area											0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**2.0013**	**2.0013**	**1.9500e-003**	**0.0000**	**2.0423**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/30/2018	5/10/2018	5	30	
2	Grading	Grading	5/11/2018	8/23/2018	5	75	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 185

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 - 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	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	53.6115	53.6115	0.0167	0.0000	53.9620
Total											**0.0000**	**53.6115**	**53.6115**	**0.0167**	**0.0000**	**53.9620**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.8669	1.8669	9.0000e-005	0.0000	1.8689
Total											**0.0000**	**1.8669**	**1.8669**	**9.0000e-005**	**0.0000**	**1.8689**

3.2 Site Preparation - 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	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	53.6115	53.6115	0.0167	0.0000	53.9620
Total											**0.0000**	**53.6115**	**53.6115**	**0.0167**	**0.0000**	**53.9620**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.8669	1.8669	9.0000e-005	0.0000	1.8689
Total											**0.0000**	**1.8669**	**1.8669**	**9.0000e-005**	**0.0000**	**1.8689**

3.3 Grading - 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	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	211.3560	211.3560	0.0658	0.0000	212.7378
Total											**0.0000**	**211.3560**	**211.3560**	**0.0658**	**0.0000**	**212.7378**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	5.1859	5.1859	2.5000e-004	0.0000	5.1913
Total											**0.0000**	**5.1859**	**5.1859**	**2.5000e-004**	**0.0000**	**5.1913**

3.3 Grading - 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	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	211.3558	211.3558	0.0658	0.0000	212.7376
Total											**0.0000**	**211.3558**	**211.3558**	**0.0658**	**0.0000**	**212.7376**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	5.1859	5.1859	2.5000e-004	0.0000	5.1913
Total											**0.0000**	**5.1859**	**5.1859**	**2.5000e-004**	**0.0000**	**5.1913**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
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	tons/yr										MT/yr					
Electricity Mitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated											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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**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	tons/yr										MT/yr					
Mitigated											0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Unmitigated											0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Total											**0.0000**	**2.0013**	**2.0013**	**1.9500e-003**	**0.0000**	**2.0423**

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	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Total											**0.0000**	**2.0013**	**2.0013**	**1.9500e-003**	**0.0000**	**2.0423**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	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
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							0.00000E+000	3.62470E+001	3.62470E+001	1.12800E-002	0.00000E+000	3.64839E+001
Graders							0.00000E+000	2.12897E+001	2.12897E+001	6.63000E-003	0.00000E+000	2.14289E+001
Rubber Tired Dozers							0.00000E+000	6.70758E+001	6.70758E+001	2.08800E-002	0.00000E+000	6.75143E+001
Scrapers							0.00000E+000	1.02049E+002	1.02049E+002	3.17700E-002	0.00000E+000	1.02717E+002
Tractors/Loaders/ Backhoes							0.00000E+000	3.83057E+001	3.83057E+001	1.19300E-002	0.00000E+000	3.85561E+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							0.00000E+000	3.62469E+001	3.62469E+001	1.12800E-002	0.00000E+000	3.64839E+001
Graders							0.00000E+000	2.12897E+001	2.12897E+001	6.63000E-003	0.00000E+000	2.14289E+001
Rubber Tired Dozers							0.00000E+000	6.70757E+001	6.70757E+001	2.08800E-002	0.00000E+000	6.75142E+001
Scrapers							0.00000E+000	1.02049E+002	1.02049E+002	3.17700E-002	0.00000E+000	1.02716E+002
Tractors/Loaders/Backhoes							0.00000E+000	3.83056E+001	3.83056E+001	1.19300E-002	0.00000E+000	3.85560E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.10354E-006	1.10354E-006	0.00000E+000	0.00000E+000	1.37047E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	9.39421E-007	9.39421E-007	0.00000E+000	0.00000E+000	9.33319E-007
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.19268E-006	1.19268E-006	0.00000E+000	0.00000E+000	1.18493E-006
Scrapers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.27389E-006	1.27389E-006	0.00000E+000	0.00000E+000	1.16826E-006
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.04423E-006	1.04423E-006	0.00000E+000	0.00000E+000	1.29681E-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				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Grading	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Grading	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	0.00	0.00
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, Annual

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.

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Woodstoves - Construction only.

Consumer Products - Construction only.

Area Coating - Construction only.

Landscape Equipment -

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	PhaseStartDate	9/29/2018	10/1/2018
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	31.90	0.00
tblFireplaces	NumberNoFireplace	5.80	3.50
tblFireplaces	NumberWood	20.30	0.00
tblProjectCharacteristics	OperationalYear	2014	2020

tblSolidWaste	SolidWasteGenerationRate	68.06	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	3,778,933.49	0.00
tblWater	OutdoorWaterUseRate	2,382,371.11	0.00
tblWoodstoves	NumberCatalytic	2.90	0.00
tblWoodstoves	NumberNoncatalytic	2.90	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018											0.0000	105.1096	105.1096	0.0320	0.0000	105.7819
Total											**0.0000**	**105.1096**	**105.1096**	**0.0320**	**0.0000**	**105.7819**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018											0.0000	105.1095	105.1095	0.0320	0.0000	105.7818
Total											**0.0000**	**105.1095**	**105.1095**	**0.0320**	**0.0000**	**105.7818**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.03**	**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	tons/yr										MT/yr					
Area											0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.7035**	**0.7035**	**6.9000e-004**	**0.0000**	**0.7179**

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	tons/yr										MT/yr					
Area											0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.7035**	**0.7035**	**6.9000e-004**	**0.0000**	**0.7179**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/17/2018	9/28/2018	5	10	
2	Grading	Grading	10/1/2018	11/9/2018	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 - 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	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	17.8705	17.8705	5.5600e-003	0.0000	17.9873
Total											**0.0000**	**17.8705**	**17.8705**	**5.5600e-003**	**0.0000**	**17.9873**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.6223	0.6223	3.0000e-005	0.0000	0.6230
Total											**0.0000**	**0.6223**	**0.6223**	**3.0000e-005**	**0.0000**	**0.6230**

3.2 Site Preparation - 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	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	17.8705	17.8705	5.5600e-003	0.0000	17.9873
Total											**0.0000**	**17.8705**	**17.8705**	**5.5600e-003**	**0.0000**	**17.9873**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.6223	0.6223	3.0000e-005	0.0000	0.6230
Total											**0.0000**	**0.6223**	**0.6223**	**3.0000e-005**	**0.0000**	**0.6230**

3.3 Grading - 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	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	84.5424	84.5424	0.0263	0.0000	85.0951
Total											**0.0000**	**84.5424**	**84.5424**	**0.0263**	**0.0000**	**85.0951**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	2.0744	2.0744	1.0000e-004	0.0000	2.0765
Total											**0.0000**	**2.0744**	**2.0744**	**1.0000e-004**	**0.0000**	**2.0765**

3.3 Grading - 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	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	84.5423	84.5423	0.0263	0.0000	85.0950
Total											**0.0000**	**84.5423**	**84.5423**	**0.0263**	**0.0000**	**85.0950**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	2.0744	2.0744	1.0000e-004	0.0000	2.0765
Total											**0.0000**	**2.0744**	**2.0744**	**1.0000e-004**	**0.0000**	**2.0765**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
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

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

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	tons/yr										MT/yr					
Single Family Housing	0											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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**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	tons/yr										MT/yr					
Mitigated											0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179
Unmitigated											0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179
Total											**0.0000**	**0.7035**	**0.7035**	**6.9000e-004**	**0.0000**	**0.7179**

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	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179
Total											**0.0000**	**0.7035**	**0.7035**	**6.9000e-004**	**0.0000**	**0.7179**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	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
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							0.00000E+000	1.44988E+001	1.44988E+001	4.51000E-003	0.00000E+000	1.45936E+001
Graders							0.00000E+000	8.51588E+000	8.51588E+000	2.65000E-003	0.00000E+000	8.57156E+000
Rubber Tired Dozers							0.00000E+000	2.43912E+001	2.43912E+001	7.59000E-003	0.00000E+000	2.45507E+001
Scrapers							0.00000E+000	4.08198E+001	4.08198E+001	1.27100E-002	0.00000E+000	4.10867E+001
Tractors/Loaders/ Backhoes							0.00000E+000	1.41873E+001	1.41873E+001	4.42000E-003	0.00000E+000	1.42800E+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							0.00000E+000	1.44988E+001	1.44988E+001	4.51000E-003	0.00000E+000	1.45936E+001
Graders							0.00000E+000	8.51587E+000	8.51587E+000	2.65000E-003	0.00000E+000	8.57155E+000
Rubber Tired Dozers							0.00000E+000	2.43912E+001	2.43912E+001	7.59000E-003	0.00000E+000	2.45506E+001
Scrapers							0.00000E+000	4.08197E+001	4.08197E+001	1.27100E-002	0.00000E+000	4.10866E+001
Tractors/Loaders/Backhoes							0.00000E+000	1.41873E+001	1.41873E+001	4.42000E-003	0.00000E+000	1.42800E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	6.89713E-007	6.89713E-007	0.00000E+000	0.00000E+000	1.37047E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.17428E-006	1.17428E-006	0.00000E+000	0.00000E+000	1.16665E-006
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.22995E-006	1.22995E-006	0.00000E+000	0.00000E+000	1.22196E-006
Scrapers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.22490E-006	1.22490E-006	0.00000E+000	0.00000E+000	1.21694E-006
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.40971E-006	1.40971E-006	0.00000E+000	0.00000E+000	1.40056E-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				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Grading	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Grading	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	0.00	0.00
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, Annual

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.

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle 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
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	NumberNoFireplace	3.50	7.60
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

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019											0.0000	117.5384	117.5384	0.0364	0.0000	118.3029
Total											**0.0000**	**117.5384**	**117.5384**	**0.0364**	**0.0000**	**118.3029**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019											0.0000	117.5383	117.5383	0.0364	0.0000	118.3027
Total											**0.0000**	**117.5383**	**117.5383**	**0.0364**	**0.0000**	**118.3027**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.4245**	**0.4245**	**4.1000e-004**	**0.0000**	**0.4332**

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	tons/yr										MT/yr					
Area											0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.4245**	**0.4245**	**4.1000e-004**	**0.0000**	**0.4332**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/29/2019	4/11/2019	5	10	
2	Grading	Grading	4/12/2019	5/30/2019	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 - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	17.5845	17.5845	5.5600e-003	0.0000	17.7014
Total											**0.0000**	**17.5845**	**17.5845**	**5.5600e-003**	**0.0000**	**17.7014**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.5998	0.5998	3.0000e-005	0.0000	0.6004
Total											**0.0000**	**0.5998**	**0.5998**	**3.0000e-005**	**0.0000**	**0.6004**

3.2 Site Preparation - 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	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	17.5845	17.5845	5.5600e-003	0.0000	17.7013
Total											**0.0000**	**17.5845**	**17.5845**	**5.5600e-003**	**0.0000**	**17.7013**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.5998	0.5998	3.0000e-005	0.0000	0.6004
Total											**0.0000**	**0.5998**	**0.5998**	**3.0000e-005**	**0.0000**	**0.6004**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	97.0216	97.0216	0.0307	0.0000	97.6662
Total											**0.0000**	**97.0216**	**97.0216**	**0.0307**	**0.0000**	**97.6662**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	2.3326	2.3326	1.1000e-004	0.0000	2.3349
Total											**0.0000**	**2.3326**	**2.3326**	**1.1000e-004**	**0.0000**	**2.3349**

3.3 Grading - 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	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	97.0214	97.0214	0.0307	0.0000	97.6661
Total											**0.0000**	**97.0214**	**97.0214**	**0.0307**	**0.0000**	**97.6661**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	2.3326	2.3326	1.1000e-004	0.0000	2.3349
Total											**0.0000**	**2.3326**	**2.3326**	**1.1000e-004**	**0.0000**	**2.3349**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
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

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

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	tons/yr										MT/yr					
Single Family Housing	0											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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**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	tons/yr										MT/yr					
Mitigated											0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Unmitigated											0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Total											**0.0000**	**0.4245**	**0.4245**	**4.1000e-004**	**0.0000**	**0.4332**

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	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Total											**0.0000**	**0.4245**	**0.4245**	**4.1000e-004**	**0.0000**	**0.4332**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	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
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							0.00000E+000	1.66399E+001	1.66399E+001	5.26000E-003	0.00000E+000	1.67504E+001
Graders							0.00000E+000	9.76871E+000	9.76871E+000	3.09000E-003	0.00000E+000	9.83362E+000
Rubber Tired Dozers							0.00000E+000	2.60099E+001	2.60099E+001	8.23000E-003	0.00000E+000	2.61827E+001
Scrapers							0.00000E+000	4.68428E+001	4.68428E+001	1.48200E-002	0.00000E+000	4.71540E+001
Tractors/Loaders/ Backhoes							0.00000E+000	1.53449E+001	1.53449E+001	4.85000E-003	0.00000E+000	1.54468E+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							0.00000E+000	1.66398E+001	1.66398E+001	5.26000E-003	0.00000E+000	1.67504E+001
Graders							0.00000E+000	9.76870E+000	9.76870E+000	3.09000E-003	0.00000E+000	9.83360E+000
Rubber Tired Dozers							0.00000E+000	2.60099E+001	2.60099E+001	8.23000E-003	0.00000E+000	2.61827E+001
Scrapers							0.00000E+000	4.68427E+001	4.68427E+001	1.48200E-002	0.00000E+000	4.71539E+001
Tractors/Loaders/Backhoes							0.00000E+000	1.53448E+001	1.53448E+001	4.85000E-003	0.00000E+000	1.54468E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20193E-006	1.20193E-006	0.00000E+000	0.00000E+000	1.19400E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.02368E-006	1.02368E-006	0.00000E+000	0.00000E+000	2.03384E-006
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.15341E-006	1.15341E-006	0.00000E+000	0.00000E+000	1.14579E-006
Scrapers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.28088E-006	1.28088E-006	0.00000E+000	0.00000E+000	1.27243E-006
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.30337E-006	1.30337E-006	0.00000E+000	0.00000E+000	6.47383E-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		
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Grading	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Grading	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	0.00	0.00
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, Annual

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.

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle 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	20.00	15.00
tblConstructionPhase	PhaseStartDate	10/5/2019	10/7/2019
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	NumberNoFireplace	7.60	6.90
tblFireplaces	NumberWood	26.60	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.21	0.00

tblSolidWaste	SolidWasteGenerationRate	88.97	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	4,951,705.95	0.00
tblWater	OutdoorWaterUseRate	2,978,703.37	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

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019											0.0000	155.0175	155.0175	0.0480	0.0000	156.0255
Total											**0.0000**	**155.0175**	**155.0175**	**0.0480**	**0.0000**	**156.0255**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019											0.0000	155.0173	155.0173	0.0480	0.0000	156.0253
Total											**0.0000**	**155.0173**	**155.0173**	**0.0480**	**0.0000**	**156.0253**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.9218**	**0.9218**	**9.0000e-004**	**0.0000**	**0.9407**

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	tons/yr										MT/yr					
Area											0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.9218**	**0.9218**	**9.0000e-004**	**0.0000**	**0.9407**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/16/2019	10/4/2019	5	15	
2	Grading	Grading	10/7/2019	12/6/2019	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 - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	26.3768	26.3768	8.3500e-003	0.0000	26.5520
Total											**0.0000**	**26.3768**	**26.3768**	**8.3500e-003**	**0.0000**	**26.5520**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.8997	0.8997	4.0000e-005	0.0000	0.9006
Total											**0.0000**	**0.8997**	**0.8997**	**4.0000e-005**	**0.0000**	**0.9006**

3.2 Site Preparation - 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	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	26.3768	26.3768	8.3500e-003	0.0000	26.5520
Total											**0.0000**	**26.3768**	**26.3768**	**8.3500e-003**	**0.0000**	**26.5520**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.8997	0.8997	4.0000e-005	0.0000	0.9006
Total											**0.0000**	**0.8997**	**0.8997**	**4.0000e-005**	**0.0000**	**0.9006**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	124.7420	124.7420	0.0395	0.0000	125.5708
Total											**0.0000**	**124.7420**	**124.7420**	**0.0395**	**0.0000**	**125.5708**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	2.9990	2.9990	1.4000e-004	0.0000	3.0020
Total											**0.0000**	**2.9990**	**2.9990**	**1.4000e-004**	**0.0000**	**3.0020**

3.3 Grading - 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	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	124.7419	124.7419	0.0395	0.0000	125.5707
Total											**0.0000**	**124.7419**	**124.7419**	**0.0395**	**0.0000**	**125.5707**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	2.9990	2.9990	1.4000e-004	0.0000	3.0020
Total											**0.0000**	**2.9990**	**2.9990**	**1.4000e-004**	**0.0000**	**3.0020**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
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	tons/yr										MT/yr					
Electricity Mitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated											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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**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	tons/yr										MT/yr					
Mitigated											0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Unmitigated											0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Total											**0.0000**	**0.9218**	**0.9218**	**9.0000e-004**	**0.0000**	**0.9407**

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	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Total											**0.0000**	**0.9218**	**0.9218**	**9.0000e-004**	**0.0000**	**0.9407**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	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
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							0.00000E+000	2.13941E+001	2.13941E+001	6.77000E-003	0.00000E+000	2.15362E+001
Graders							0.00000E+000	1.25598E+001	1.25598E+001	3.97000E-003	0.00000E+000	1.26432E+001
Rubber Tired Dozers							0.00000E+000	3.60137E+001	3.60137E+001	1.13900E-002	0.00000E+000	3.62530E+001
Scrapers							0.00000E+000	6.02264E+001	6.02264E+001	1.90500E-002	0.00000E+000	6.06266E+001
Tractors/Loaders/ Backhoes							0.00000E+000	2.09248E+001	2.09248E+001	6.62000E-003	0.00000E+000	2.10638E+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							0.00000E+000	2.13941E+001	2.13941E+001	6.77000E-003	0.00000E+000	2.15362E+001
Graders							0.00000E+000	1.25598E+001	1.25598E+001	3.97000E-003	0.00000E+000	1.26432E+001
Rubber Tired Dozers							0.00000E+000	3.60137E+001	3.60137E+001	1.13900E-002	0.00000E+000	3.62530E+001
Scrapers							0.00000E+000	6.02263E+001	6.02263E+001	1.90500E-002	0.00000E+000	6.06265E+001
Tractors/Loaders/Backhoes							0.00000E+000	2.09248E+001	2.09248E+001	6.62000E-003	0.00000E+000	2.10638E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.40226E-006	1.40226E-006	0.00000E+000	0.00000E+000	9.28668E-007
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	7.96193E-007	7.96193E-007	0.00000E+000	0.00000E+000	1.58188E-006
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.38836E-006	1.38836E-006	0.00000E+000	0.00000E+000	1.10336E-006
Scrapers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.16228E-006	1.16228E-006	0.00000E+000	0.00000E+000	1.15461E-006
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.43371E-006	1.43371E-006	0.00000E+000	0.00000E+000	9.49495E-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		
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Grading	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Grading	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	0.00	0.00
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, Annual

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.

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle 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
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	0.09	0.00
tblSolidWaste	SolidWasteGenerationRate	193.52	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	10,750,414.23	0.00
tblWater	OutdoorWaterUseRate	1,191,481.35	0.00
tblWater	OutdoorWaterUseRate	6,777,435.06	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018											0.0000	126.2181	126.2181	0.0384	0.0000	127.0241
2019											0.0000	42.5925	42.5925	0.0132	0.0000	42.8691
Total											**0.0000**	**168.8106**	**168.8106**	**0.0516**	**0.0000**	**169.8932**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018											0.0000	126.2179	126.2179	0.0384	0.0000	127.0240
2019											0.0000	42.5925	42.5925	0.0132	0.0000	42.8690
Total											**0.0000**	**168.8104**	**168.8104**	**0.0516**	**0.0000**	**169.8930**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**2.0013**	**2.0013**	**1.9500e-003**	**0.0000**	**2.0423**

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	tons/yr										MT/yr					
Area											0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**2.0013**	**2.0013**	**1.9500e-003**	**0.0000**	**2.0423**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Backbone Infrastructure	Trenching	9/28/2018	1/31/2019	5	90	

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 - 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	tons/yr										MT/yr					
Off-Road											0.0000	122.7435	122.7435	0.0382	0.0000	123.5460
Total											**0.0000**	**122.7435**	**122.7435**	**0.0382**	**0.0000**	**123.5460**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	3.4746	3.4746	1.7000e-004	0.0000	3.4782
Total											**0.0000**	**3.4746**	**3.4746**	**1.7000e-004**	**0.0000**	**3.4782**

3.2 Backbone Infrastructure - 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	tons/yr										MT/yr					
Off-Road											0.0000	122.7434	122.7434	0.0382	0.0000	123.5458
Total											**0.0000**	**122.7434**	**122.7434**	**0.0382**	**0.0000**	**123.5458**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	3.4746	3.4746	1.7000e-004	0.0000	3.4782
Total											**0.0000**	**3.4746**	**3.4746**	**1.7000e-004**	**0.0000**	**3.4782**

3.2 Backbone Infrastructure - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	41.4429	41.4429	0.0131	0.0000	41.7183
Total											**0.0000**	**41.4429**	**41.4429**	**0.0131**	**0.0000**	**41.7183**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.1496	1.1496	6.0000e-005	0.0000	1.1508
Total											**0.0000**	**1.1496**	**1.1496**	**6.0000e-005**	**0.0000**	**1.1508**

3.2 Backbone Infrastructure - 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	tons/yr										MT/yr					
Off-Road											0.0000	41.4429	41.4429	0.0131	0.0000	41.7182
Total											**0.0000**	**41.4429**	**41.4429**	**0.0131**	**0.0000**	**41.7182**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.1496	1.1496	6.0000e-005	0.0000	1.1508
Total											**0.0000**	**1.1496**	**1.1496**	**6.0000e-005**	**0.0000**	**1.1508**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
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	tons/yr										MT/yr					
Electricity Mitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated											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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**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	tons/yr										MT/yr					
Mitigated											0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Unmitigated											0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Total											**0.0000**	**2.0013**	**2.0013**	**1.9500e-003**	**0.0000**	**2.0423**

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	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Total											**0.0000**	**2.0013**	**2.0013**	**1.9500e-003**	**0.0000**	**2.0423**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

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	0.00	0.00	0.00	0.00	0.00	0.00	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
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							0.00000E+000	6.25238E+000	6.25238E+000	1.95000E-003	0.00000E+000	6.29342E+000
Off-Highway Trucks							0.00000E+000	1.07564E+002	1.07564E+002	3.36200E-002	0.00000E+000	1.08270E+002
Other Material Handling Equipment							0.00000E+000	2.34984E+001	2.34984E+001	7.35000E-003	0.00000E+000	2.36526E+001
Tractors/Loaders/ Backhoes							0.00000E+000	1.27140E+001	1.27140E+001	3.97000E-003	0.00000E+000	1.27974E+001
Trenchers							0.00000E+000	1.41575E+001	1.41575E+001	4.43000E-003	0.00000E+000	1.42505E+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							0.00000E+000	6.25237E+000	6.25237E+000	1.95000E-003	0.00000E+000	6.29342E+000
Off-Highway Trucks							0.00000E+000	1.07564E+002	1.07564E+002	3.36200E-002	0.00000E+000	1.08270E+002
Other Material Handling Equipment							0.00000E+000	2.34983E+001	2.34983E+001	7.35000E-003	0.00000E+000	2.36526E+001
Tractors/Loaders/Backhoes							0.00000E+000	1.27139E+001	1.27139E+001	3.97000E-003	0.00000E+000	1.27974E+001
Trenchers							0.00000E+000	1.41575E+001	1.41575E+001	4.43000E-003	0.00000E+000	1.42505E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Percent Reduction											
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.59939E-006	1.59939E-006	0.00000E+000	0.00000E+000	0.00000E+000
Off-Highway Trucks	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20858E-006	1.20858E-006	0.00000E+000	0.00000E+000	1.20070E-006
Other Material Handling Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	8.51123E-007	8.51123E-007	0.00000E+000	0.00000E+000	1.26836E-006
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.57308E-006	1.57308E-006	0.00000E+000	0.00000E+000	1.56282E-006
Trenchers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.41268E-006	1.41268E-006	0.00000E+000	0.00000E+000	7.01732E-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		
No	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	0.00	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	0.10	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)

San Diego County, Annual

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 - 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.

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle 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	51.15	0.00
tblFireplaces	NumberNoFireplace	9.30	58.00
tblFireplaces	NumberWood	32.55	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	109.06	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	6,059,324.38	0.00
tblWater	OutdoorWaterUseRate	3,820,008.85	0.00
tblWoodstoves	NumberCatalytic	4.65	0.00
tblWoodstoves	NumberNoncatalytic	4.65	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019											0.0000	166.6665	166.6665	0.0515	0.0000	167.7485
Total											**0.0000**	**166.6665**	**166.6665**	**0.0515**	**0.0000**	**167.7485**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019											0.0000	166.6663	166.6663	0.0515	0.0000	167.7483
Total											**0.0000**	**166.6663**	**166.6663**	**0.0515**	**0.0000**	**167.7483**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.7035**	**0.7035**	**6.9000e-004**	**0.0000**	**0.7179**

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	tons/yr										MT/yr					
Area											0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.7035**	**0.7035**	**6.9000e-004**	**0.0000**	**0.7179**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Backbone Infrastructure	Trenching	3/25/2019	7/26/2019	5	90	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 - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	162.1680	162.1680	0.0513	0.0000	163.2455
Total											**0.0000**	**162.1680**	**162.1680**	**0.0513**	**0.0000**	**163.2455**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	4.4985	4.4985	2.2000e-004	0.0000	4.5030
Total											**0.0000**	**4.4985**	**4.4985**	**2.2000e-004**	**0.0000**	**4.5030**

3.2 Backbone Infrastructure - 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	tons/yr										MT/yr					
Off-Road											0.0000	162.1678	162.1678	0.0513	0.0000	163.2453
Total											**0.0000**	**162.1678**	**162.1678**	**0.0513**	**0.0000**	**163.2453**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	4.4985	4.4985	2.2000e-004	0.0000	4.5030
Total											**0.0000**	**4.4985**	**4.4985**	**2.2000e-004**	**0.0000**	**4.5030**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	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

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

4.4 Fleet Mix

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	tons/yr										MT/yr					
Electricity Mitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated											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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

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	tons/yr										MT/yr					
Single Family Housing	0											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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**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	tons/yr										MT/yr					
Mitigated											0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179
Unmitigated											0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179
Total											**0.0000**	**0.7035**	**0.7035**	**6.9000e-004**	**0.0000**	**0.7179**

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	tons/yr										MT/yr					
Consumer Products											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
Landscaping											0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.7035**	**0.7035**	**6.9000e-004**	**0.0000**	**0.7179**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

Valiano - Backbone Infrastructure (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												
Backbone Infrastructure	0.00	0.00	0.00	0.00	0.00	0.00	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
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							0.00000E+000	6.17740E+000	6.17740E+000	1.95000E-003	0.00000E+000	6.21844E+000
Off-Highway Trucks							0.00000E+000	1.06241E+002	1.06241E+002	3.36100E-002	0.00000E+000	1.06947E+002
Other Material Handling Equipment							0.00000E+000	2.32166E+001	2.32166E+001	7.35000E-003	0.00000E+000	2.33708E+001
Tractors/Loaders/ Backhoes							0.00000E+000	1.25549E+001	1.25549E+001	3.97000E-003	0.00000E+000	1.26383E+001
Trenchers							0.00000E+000	1.39785E+001	1.39785E+001	4.42000E-003	0.00000E+000	1.40714E+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							0.00000E+000	6.17739E+000	6.17739E+000	1.95000E-003	0.00000E+000	6.21844E+000
Off-Highway Trucks							0.00000E+000	1.06241E+002	1.06241E+002	3.36100E-002	0.00000E+000	1.06946E+002
Other Material Handling Equipment							0.00000E+000	2.32165E+001	2.32165E+001	7.35000E-003	0.00000E+000	2.33708E+001
Tractors/Loaders/Backhoes							0.00000E+000	1.25549E+001	1.25549E+001	3.97000E-003	0.00000E+000	1.26383E+001
Trenchers							0.00000E+000	1.39785E+001	1.39785E+001	4.42000E-003	0.00000E+000	1.40713E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.61880E-006	1.61880E-006	0.00000E+000	0.00000E+000	0.00000E+000
Off-Highway Trucks	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.12951E-006	1.12951E-006	0.00000E+000	0.00000E+000	1.21556E-006
Other Material Handling Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.29218E-006	1.29218E-006	0.00000E+000	0.00000E+000	1.28365E-006
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.59301E-006	1.59301E-006	0.00000E+000	0.00000E+000	7.91246E-007
Trenchers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.43077E-006	1.43077E-006	0.00000E+000	0.00000E+000	1.42133E-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				

		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	0.00	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

Solid Waste Mitigation

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

Valiano - Backbone Infrastructure (Phase 3 - N 3)

San Diego County, Annual

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 - 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.

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle 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	51.15	0.00
tblFireplaces	NumberNoFireplace	9.30	35.00
tblFireplaces	NumberWood	32.55	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	109.06	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	6,059,324.38	0.00
tblWater	OutdoorWaterUseRate	3,820,008.85	0.00
tblWoodstoves	NumberCatalytic	4.65	0.00
tblWoodstoves	NumberNoncatalytic	4.65	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019											0.0000	142.5924	142.5924	0.0441	0.0000	143.5181
2020											0.0000	23.5314	23.5314	7.4400e-003	0.0000	23.6877
Total											**0.0000**	**166.1239**	**166.1239**	**0.0515**	**0.0000**	**167.2058**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019											0.0000	142.5923	142.5923	0.0441	0.0000	143.5180
2020											0.0000	23.5314	23.5314	7.4400e-003	0.0000	23.6876
Total											**0.0000**	**166.1237**	**166.1237**	**0.0515**	**0.0000**	**167.2056**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.4245**	**0.4245**	**4.1000e-004**	**0.0000**	**0.4332**

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	tons/yr										MT/yr					
Area											0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.4245**	**0.4245**	**4.1000e-004**	**0.0000**	**0.4332**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Backbone Infrastructure	Trenching	9/16/2019	1/17/2020	5	90	Neighborhood 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 - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	138.7437	138.7437	0.0439	0.0000	139.6656
Total											**0.0000**	**138.7437**	**138.7437**	**0.0439**	**0.0000**	**139.6656**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	3.8487	3.8487	1.8000e-004	0.0000	3.8526
Total											**0.0000**	**3.8487**	**3.8487**	**1.8000e-004**	**0.0000**	**3.8526**

3.2 Backbone Infrastructure - 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	tons/yr										MT/yr					
Off-Road											0.0000	138.7436	138.7436	0.0439	0.0000	139.6654
Total											**0.0000**	**138.7436**	**138.7436**	**0.0439**	**0.0000**	**139.6654**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	3.8487	3.8487	1.8000e-004	0.0000	3.8526
Total											**0.0000**	**3.8487**	**3.8487**	**1.8000e-004**	**0.0000**	**3.8526**

3.2 Backbone Infrastructure - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	22.9078	22.9078	7.4100e-003	0.0000	23.0634
Total											**0.0000**	**22.9078**	**22.9078**	**7.4100e-003**	**0.0000**	**23.0634**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.6236	0.6236	3.0000e-005	0.0000	0.6242
Total											**0.0000**	**0.6236**	**0.6236**	**3.0000e-005**	**0.0000**	**0.6242**

3.2 Backbone Infrastructure - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	22.9078	22.9078	7.4100e-003	0.0000	23.0634
Total											**0.0000**	**22.9078**	**22.9078**	**7.4100e-003**	**0.0000**	**23.0634**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.6236	0.6236	3.0000e-005	0.0000	0.6242
Total											**0.0000**	**0.6236**	**0.6236**	**3.0000e-005**	**0.0000**	**0.6242**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
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

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

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	tons/yr										MT/yr					
Single Family Housing	0											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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**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	tons/yr										MT/yr					
Mitigated											0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Unmitigated											0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Total											**0.0000**	**0.4245**	**0.4245**	**4.1000e-004**	**0.0000**	**0.4332**

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	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Total											**0.0000**	**0.4245**	**0.4245**	**4.1000e-004**	**0.0000**	**0.4332**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

Valiano - Backbone Infrastructure (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												
Backbone Infrastructure	0.00	0.00	0.00	0.00	0.00	0.00	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
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							0.00000E+000	6.15800E+000	6.15800E+000	1.95000E-003	0.00000E+000	6.19905E+000
Off-Highway Trucks							0.00000E+000	1.05899E+002	1.05899E+002	3.36100E-002	0.00000E+000	1.06605E+002
Other Material Handling Equipment							0.00000E+000	2.31437E+001	2.31437E+001	7.35000E-003	0.00000E+000	2.32979E+001
Tractors/Loaders/ Backhoes							0.00000E+000	1.25149E+001	1.25149E+001	3.97000E-003	0.00000E+000	1.25984E+001
Trenchers							0.00000E+000	1.39359E+001	1.39359E+001	4.42000E-003	0.00000E+000	1.40288E+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							0.00000E+000	6.15800E+000	6.15800E+000	1.95000E-003	0.00000E+000	6.19904E+000
Off-Highway Trucks							0.00000E+000	1.05899E+002	1.05899E+002	3.36100E-002	0.00000E+000	1.06605E+002
Other Material Handling Equipment							0.00000E+000	2.31436E+001	2.31436E+001	7.35000E-003	0.00000E+000	2.32979E+001
Tractors/Loaders/Backhoes							0.00000E+000	1.25149E+001	1.25149E+001	3.97000E-003	0.00000E+000	1.25983E+001
Trenchers							0.00000E+000	1.39359E+001	1.39359E+001	4.42000E-003	0.00000E+000	1.40288E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Percent Reduction											
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.61315E-006
Off-Highway Trucks	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.13315E-006	1.13315E-006	0.00000E+000	0.00000E+000	1.21946E-006
Other Material Handling Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.29625E-006	1.29625E-006	0.00000E+000	0.00000E+000	1.28767E-006
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.59809E-006	1.59809E-006	0.00000E+000	0.00000E+000	7.93755E-007
Trenchers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	7.17572E-007	7.17572E-007	0.00000E+000	0.00000E+000	1.42564E-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				

		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	0.00	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

Solid Waste Mitigation

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

Valiano - Backbone Infrastructure (Phase 4 - N 4)

San Diego County, Annual

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.

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle 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	41.80	0.00
tblFireplaces	NumberNoFireplace	7.60	6.90
tblFireplaces	NumberWood	26.60	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	88.97	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	4,951,705.95	0.00
tblWater	OutdoorWaterUseRate	2,978,703.37	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

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020											0.0000	162.9100	162.9100	0.0515	0.0000	163.9914
Total											**0.0000**	**162.9100**	**162.9100**	**0.0515**	**0.0000**	**163.9914**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020											0.0000	162.9098	162.9098	0.0515	0.0000	163.9913
Total											**0.0000**	**162.9098**	**162.9098**	**0.0515**	**0.0000**	**163.9913**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.9218**	**0.9218**	**9.0000e-004**	**0.0000**	**0.9407**

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	tons/yr										MT/yr					
Area											0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.9218**	**0.9218**	**9.0000e-004**	**0.0000**	**0.9407**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Backbone Infrastructure	Trenching	3/25/2020	7/28/2020	5	90	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 - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	158.5928	158.5928	0.0513	0.0000	159.6699
Total											**0.0000**	**158.5928**	**158.5928**	**0.0513**	**0.0000**	**159.6699**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	4.3172	4.3172	2.1000e-004	0.0000	4.3215
Total											**0.0000**	**4.3172**	**4.3172**	**2.1000e-004**	**0.0000**	**4.3215**

3.2 Backbone Infrastructure - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	158.5926	158.5926	0.0513	0.0000	159.6697
Total											**0.0000**	**158.5926**	**158.5926**	**0.0513**	**0.0000**	**159.6697**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	4.3172	4.3172	2.1000e-004	0.0000	4.3215
Total											**0.0000**	**4.3172**	**4.3172**	**2.1000e-004**	**0.0000**	**4.3215**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
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	tons/yr										MT/yr					
Electricity Mitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated											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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**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	tons/yr										MT/yr					
Mitigated											0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Unmitigated											0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Total											**0.0000**	**0.9218**	**0.9218**	**9.0000e-004**	**0.0000**	**0.9407**

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	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Total											**0.0000**	**0.9218**	**0.9218**	**9.0000e-004**	**0.0000**	**0.9407**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	0.0000	0.0000	0.0000	0.0000
Mitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

Valiano - Backbone Infrastructure (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												
Backbone Infrastructure	0.00	0.00	0.00	0.00	0.00	0.00	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
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							0.00000E+000	6.04311E+000	6.04311E+000	1.95000E-003	0.00000E+000	6.08415E+000
Off-Highway Trucks							0.00000E+000	1.03876E+002	1.03876E+002	3.36000E-002	0.00000E+000	1.04581E+002
Other Material Handling Equipment							0.00000E+000	2.27119E+001	2.27119E+001	7.35000E-003	0.00000E+000	2.28661E+001
Tractors/Loaders/ Backhoes							0.00000E+000	1.22784E+001	1.22784E+001	3.97000E-003	0.00000E+000	1.23618E+001
Trenchers							0.00000E+000	1.36836E+001	1.36836E+001	4.43000E-003	0.00000E+000	1.37766E+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							0.00000E+000	6.04310E+000	6.04310E+000	1.95000E-003	0.00000E+000	6.08415E+000
Off-Highway Trucks							0.00000E+000	1.03876E+002	1.03876E+002	3.36000E-002	0.00000E+000	1.04581E+002
Other Material Handling Equipment							0.00000E+000	2.27118E+001	2.27118E+001	7.35000E-003	0.00000E+000	2.28661E+001
Tractors/Loaders/Backhoes							0.00000E+000	1.22784E+001	1.22784E+001	3.97000E-003	0.00000E+000	1.23617E+001
Trenchers							0.00000E+000	1.36836E+001	1.36836E+001	4.43000E-003	0.00000E+000	1.37766E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Percent Reduction											
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.65478E-006	1.65478E-006	0.00000E+000	0.00000E+000	0.00000E+000
Off-Highway Trucks	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.15523E-006	1.15523E-006	0.00000E+000	0.00000E+000	1.14743E-006
Other Material Handling Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.32090E-006	1.32090E-006	0.00000E+000	0.00000E+000	8.74657E-007
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.62888E-006	1.62888E-006	0.00000E+000	0.00000E+000	1.61789E-006
Trenchers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	7.30800E-007	7.30800E-007	0.00000E+000	0.00000E+000	1.45174E-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				

		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	0.00	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	0.20	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, Annual

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.

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle 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 -

Trips and VMT -

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	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	180.00
tblConstructionPhase	NumDays	1,110.00	245.00
tblConstructionPhase	NumDays	75.00	245.00
tblConstructionPhase	PhaseEndDate	10/1/2020	1/23/2020
tblConstructionPhase	PhaseEndDate	12/31/2020	1/23/2020
tblConstructionPhase	PhaseStartDate	1/24/2020	5/17/2019
tblConstructionPhase	PhaseStartDate	1/24/2020	2/15/2019
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	90.75	0.00
tblFireplaces	NumberNoFireplace	16.50	15.40
tblFireplaces	NumberWood	57.75	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	193.52	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	10,750,414.23	0.00
tblWater	OutdoorWaterUseRate	1,191,481.35	0.00
tblWater	OutdoorWaterUseRate	6,777,435.06	0.00
tblWoodstoves	NumberCatalytic	8.25	0.00
tblWoodstoves	NumberNoncatalytic	8.25	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019											0.0000	1,187.6919	1,187.6919	0.2731	0.0000	1,193.4268
2020											0.0000	87.8273	87.8273	0.0202	0.0000	88.2515
Total											**0.0000**	**1,275.5192**	**1,275.5192**	**0.2933**	**0.0000**	**1,281.6784**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019											0.0000	1,187.6907	1,187.6907	0.2731	0.0000	1,193.4256
2020											0.0000	87.8273	87.8273	0.0202	0.0000	88.2514
Total											**0.0000**	**1,275.5179**	**1,275.5179**	**0.2933**	**0.0000**	**1,281.6770**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**2.0013**	**2.0013**	**1.9500e-003**	**0.0000**	**2.0423**

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	tons/yr										MT/yr					
Area											0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**2.0013**	**2.0013**	**1.9500e-003**	**0.0000**	**2.0423**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	2/15/2019	1/23/2020	5	245	
2	Paving	Paving	2/15/2019	1/23/2020	5	245	
3	Architectural Coating	Architectural Coating	5/17/2019	1/23/2020	5	180	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 601,425; Residential Outdoor: 200,475; 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	78.00	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	16.00	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 - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	800.6999	800.6999	0.1948	0.0000	804.7910
Total											**0.0000**	**800.6999**	**800.6999**	**0.1948**	**0.0000**	**804.7910**

3.2 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	58.3863	58.3863	4.4000e-004	0.0000	58.3955
Worker											0.0000	59.2602	59.2602	2.8400e-003	0.0000	59.3198
Total											**0.0000**	**117.6465**	**117.6465**	**3.2800e-003**	**0.0000**	**117.7153**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	800.6989	800.6989	0.1948	0.0000	804.7900
Total											**0.0000**	**800.6989**	**800.6989**	**0.1948**	**0.0000**	**804.7900**

3.2 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	58.3863	58.3863	4.4000e-004	0.0000	58.3955
Worker											0.0000	59.2602	59.2602	2.8400e-003	0.0000	59.3198
Total											**0.0000**	**117.6465**	**117.6465**	**3.2800e-003**	**0.0000**	**117.7153**

3.2 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	58.8157	58.8157	0.0143	0.0000	59.1166
Total											**0.0000**	**58.8157**	**58.8157**	**0.0143**	**0.0000**	**59.1166**

3.2 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	4.2538	4.2538	3.0000e-005	0.0000	4.2545
Worker											0.0000	4.2405	4.2405	2.0000e-004	0.0000	4.2447
Total											**0.0000**	**8.4943**	**8.4943**	**2.3000e-004**	**0.0000**	**8.4992**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	58.8157	58.8157	0.0143	0.0000	59.1166
Total											**0.0000**	**58.8157**	**58.8157**	**0.0143**	**0.0000**	**59.1166**

3.2 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	4.2538	4.2538	3.0000e-005	0.0000	4.2545
Worker											0.0000	4.2405	4.2405	2.0000e-004	0.0000	4.2447
Total											**0.0000**	**8.4943**	**8.4943**	**2.3000e-004**	**0.0000**	**8.4992**

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	tons/yr										MT/yr					
Off-Road											0.0000	228.4499	228.4499	0.0723	0.0000	229.9678
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**228.4499**	**228.4499**	**0.0723**	**0.0000**	**229.9678**

3.3 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	11.3962	11.3962	5.5000e-004	0.0000	11.4077
Total											**0.0000**	**11.3962**	**11.3962**	**5.5000e-004**	**0.0000**	**11.4077**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	228.4497	228.4497	0.0723	0.0000	229.9675
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**228.4497**	**228.4497**	**0.0723**	**0.0000**	**229.9675**

3.3 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	11.3962	11.3962	5.5000e-004	0.0000	11.4077
Total											**0.0000**	**11.3962**	**11.3962**	**5.5000e-004**	**0.0000**	**11.4077**

3.3 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	16.6618	16.6618	5.3900e-003	0.0000	16.7749
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**16.6618**	**16.6618**	**5.3900e-003**	**0.0000**	**16.7749**

3.3 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.8155	0.8155	4.0000e-005	0.0000	0.8163
Total											**0.0000**	**0.8155**	**0.8155**	**4.0000e-005**	**0.0000**	**0.8163**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	16.6617	16.6617	5.3900e-003	0.0000	16.7749
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**16.6617**	**16.6617**	**5.3900e-003**	**0.0000**	**16.7749**

3.3 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.8155	0.8155	4.0000e-005	0.0000	0.8163
Total											**0.0000**	**0.8155**	**0.8155**	**4.0000e-005**	**0.0000**	**0.8163**

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	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	20.8090	20.8090	1.7600e-003	0.0000	20.8459
Total											**0.0000**	**20.8090**	**20.8090**	**1.7600e-003**	**0.0000**	**20.8459**

3.4 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	8.6904	8.6904	4.2000e-004	0.0000	8.6992
Total											**0.0000**	**8.6904**	**8.6904**	**4.2000e-004**	**0.0000**	**8.6992**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	20.8090	20.8090	1.7600e-003	0.0000	20.8459
Total											**0.0000**	**20.8090**	**20.8090**	**1.7600e-003**	**0.0000**	**20.8459**

3.4 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	8.6904	8.6904	4.2000e-004	0.0000	8.6992
Total											**0.0000**	**8.6904**	**8.6904**	**4.2000e-004**	**0.0000**	**8.6992**

3.4 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	2.1703	2.1703	1.7000e-004	0.0000	2.1738
Total											**0.0000**	**2.1703**	**2.1703**	**1.7000e-004**	**0.0000**	**2.1738**

3.4 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.8698	0.8698	4.0000e-005	0.0000	0.8707
Total											**0.0000**	**0.8698**	**0.8698**	**4.0000e-005**	**0.0000**	**0.8707**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	2.1703	2.1703	1.7000e-004	0.0000	2.1738
Total											**0.0000**	**2.1703**	**2.1703**	**1.7000e-004**	**0.0000**	**2.1738**

3.4 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.8698	0.8698	4.0000e-005	0.0000	0.8707
Total											**0.0000**	**0.8698**	**0.8698**	**4.0000e-005**	**0.0000**	**0.8707**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
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

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0											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
Total												**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	tons/yr										MT/yr					
City Park	0											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
Total												**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**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	tons/yr										MT/yr					
Mitigated											0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Unmitigated											0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Total											**0.0000**	**2.0013**	**2.0013**	**1.9500e-003**	**0.0000**	**2.0423**

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	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Total											**0.0000**	**2.0013**	**2.0013**	**1.9500e-003**	**0.0000**	**2.0423**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	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
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							0.00000E+000	2.29793E+001	2.29793E+001	1.93000E-003	0.00000E+000	2.30197E+001
Cranes							0.00000E+000	1.62779E+002	1.62779E+002	5.15800E-002	0.00000E+000	1.63862E+002
Forklifts							0.00000E+000	1.51118E+002	1.51118E+002	4.78800E-002	0.00000E+000	1.52124E+002
Generator Sets							0.00000E+000	2.07714E+002	2.07714E+002	1.30600E-002	0.00000E+000	2.07988E+002
Pavers							0.00000E+000	9.93308E+001	9.93308E+001	3.14700E-002	0.00000E+000	9.99918E+001
Paving Equipment							0.00000E+000	8.81501E+001	8.81501E+001	2.79300E-002	0.00000E+000	8.87367E+001
Rollers							0.00000E+000	5.76308E+001	5.76308E+001	1.82600E-002	0.00000E+000	5.80142E+001
Tractors/Loaders/ Backhoes							0.00000E+000	2.68734E+002	2.68734E+002	8.51500E-002	0.00000E+000	2.70522E+002
Welders							0.00000E+000	6.91711E+001	6.91711E+001	1.14700E-002	0.00000E+000	6.94120E+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							0.00000E+000	2.29793E+001	2.29793E+001	1.93000E-003	0.00000E+000	2.30197E+001
Cranes							0.00000E+000	1.62779E+002	1.62779E+002	5.15800E-002	0.00000E+000	1.63862E+002
Forklifts							0.00000E+000	1.51118E+002	1.51118E+002	4.78800E-002	0.00000E+000	1.52123E+002
Generator Sets							0.00000E+000	2.07713E+002	2.07713E+002	1.30600E-002	0.00000E+000	2.07988E+002
Pavers							0.00000E+000	9.93307E+001	9.93307E+001	3.14700E-002	0.00000E+000	9.99917E+001
Paving Equipment							0.00000E+000	8.81500E+001	8.81500E+001	2.79300E-002	0.00000E+000	8.87366E+001
Rollers							0.00000E+000	5.76307E+001	5.76307E+001	1.82600E-002	0.00000E+000	5.80142E+001
Tractors/Loaders/Backhoes							0.00000E+000	2.68734E+002	2.68734E+002	8.51500E-002	0.00000E+000	2.70522E+002
Welders							0.00000E+000	6.91710E+001	6.91710E+001	1.14700E-002	0.00000E+000	6.94119E+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	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	8.70349E-007	8.70349E-007	0.00000E+000	0.00000E+000	1.30323E-006
Cranes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.16723E-006	1.16723E-006	0.00000E+000	0.00000E+000	1.22054E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.19112E-006	1.19112E-006	0.00000E+000	0.00000E+000	1.18325E-006
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20358E-006	1.20358E-006	0.00000E+000	0.00000E+000	1.20199E-006
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20808E-006	1.20808E-006	0.00000E+000	0.00000E+000	1.20010E-006
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.24787E-006	1.24787E-006	0.00000E+000	0.00000E+000	1.23962E-006
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.21463E-006	1.21463E-006	0.00000E+000	0.00000E+000	1.20660E-006
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.19077E-006	1.19077E-006	0.00000E+000	0.00000E+000	1.18290E-006
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.15655E-006	1.15655E-006	0.00000E+000	0.00000E+000	1.15254E-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				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	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	0.10	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 - Vertical Development (Phase 2 - N 2)

San Diego County, Annual

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.

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle 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	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
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	20.00	35.00
tblConstructionPhase	NumDays	300.00	90.00
tblConstructionPhase	NumDays	20.00	90.00
tblConstructionPhase	PhaseEndDate	6/26/2020	5/7/2020
tblConstructionPhase	PhaseEndDate	9/11/2020	5/8/2020
tblConstructionPhase	PhaseStartDate	5/9/2020	3/20/2020
tblConstructionPhase	PhaseStartDate	5/9/2020	1/6/2020
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	31.90	0.00
tblFireplaces	NumberNoFireplace	5.80	3.50
tblFireplaces	NumberWood	20.30	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	68.06	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	3,778,933.49	0.00
tblWater	OutdoorWaterUseRate	2,382,371.11	0.00
tblWoodstoves	NumberCatalytic	2.90	0.00
tblWoodstoves	NumberNoncatalytic	2.90	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020											0.0000	524.0612	524.0612	0.1306	0.0000	526.8033
Total											**0.0000**	**524.0612**	**524.0612**	**0.1306**	**0.0000**	**526.8033**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020											0.0000	524.0606	524.0606	0.1306	0.0000	526.8027
Total											**0.0000**	**524.0606**	**524.0606**	**0.1306**	**0.0000**	**526.8027**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.7035**	**0.7035**	**6.9000e-004**	**0.0000**	**0.7179**

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	tons/yr										MT/yr					
Area											0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.7035**	**0.7035**	**6.9000e-004**	**0.0000**	**0.7179**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/6/2020	5/8/2020	5	90	
2	Paving	Paving	1/6/2020	5/8/2020	5	90	
3	Architectural Coating	Architectural Coating	3/20/2020	5/7/2020	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 211,410; Residential Outdoor: 70,470; 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	21.00	6.00	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	4.00	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 - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	415.1698	415.1698	0.1012	0.0000	417.2940
Total											**0.0000**	**415.1698**	**415.1698**	**0.1012**	**0.0000**	**417.2940**

3.2 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5.4049	5.4049	4.0000e-005	0.0000	5.4057
Worker											0.0000	6.0441	6.0441	2.9000e-004	0.0000	6.0501
Total											**0.0000**	**11.4490**	**11.4490**	**3.3000e-004**	**0.0000**	**11.4558**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	415.1693	415.1693	0.1012	0.0000	417.2935
Total											**0.0000**	**415.1693**	**415.1693**	**0.1012**	**0.0000**	**417.2935**

3.2 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5.4049	5.4049	4.0000e-005	0.0000	5.4057
Worker											0.0000	6.0441	6.0441	2.9000e-004	0.0000	6.0501
Total											**0.0000**	**11.4490**	**11.4490**	**3.3000e-004**	**0.0000**	**11.4558**

3.3 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	88.2093	88.2093	0.0285	0.0000	88.8084
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**88.2093**	**88.2093**	**0.0285**	**0.0000**	**88.8084**

3.3 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	4.3172	4.3172	2.1000e-004	0.0000	4.3215
Total											**0.0000**	**4.3172**	**4.3172**	**2.1000e-004**	**0.0000**	**4.3215**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	88.2092	88.2092	0.0285	0.0000	88.8083
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**88.2092**	**88.2092**	**0.0285**	**0.0000**	**88.8083**

3.3 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	4.3172	4.3172	2.1000e-004	0.0000	4.3215
Total											**0.0000**	**4.3172**	**4.3172**	**2.1000e-004**	**0.0000**	**4.3215**

3.4 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	4.4682	4.4682	3.5000e-004	0.0000	4.4755
Total											**0.0000**	**4.4682**	**4.4682**	**3.5000e-004**	**0.0000**	**4.4755**

3.4 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.4477	0.4477	2.0000e-005	0.0000	0.4482
Total											**0.0000**	**0.4477**	**0.4477**	**2.0000e-005**	**0.0000**	**0.4482**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	4.4682	4.4682	3.5000e-004	0.0000	4.4755
Total											**0.0000**	**4.4682**	**4.4682**	**3.5000e-004**	**0.0000**	**4.4755**

3.4 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.4477	0.4477	2.0000e-005	0.0000	0.4482
Total											**0.0000**	**0.4477**	**0.4477**	**2.0000e-005**	**0.0000**	**0.4482**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
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

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

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	tons/yr										MT/yr					
Single Family Housing	0											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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**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	tons/yr										MT/yr					
Mitigated											0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179
Unmitigated											0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179
Total											**0.0000**	**0.7035**	**0.7035**	**6.9000e-004**	**0.0000**	**0.7179**

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	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179
Total											**0.0000**	**0.7035**	**0.7035**	**6.9000e-004**	**0.0000**	**0.7179**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	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
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							0.00000E+000	4.46819E+000	4.46819E+000	3.50000E-004	0.00000E+000	4.47546E+000
Cranes							0.00000E+000	7.81126E+001	7.81126E+001	2.52600E-002	0.00000E+000	7.86431E+001
Forklifts							0.00000E+000	7.25173E+001	7.25173E+001	2.34500E-002	0.00000E+000	7.30098E+001
Generator Sets							0.00000E+000	1.01737E+002	1.01737E+002	5.73000E-003	0.00000E+000	1.01858E+002
Pavers							0.00000E+000	3.57418E+001	3.57418E+001	1.15600E-002	0.00000E+000	3.59845E+001
Paving Equipment							0.00000E+000	3.17238E+001	3.17238E+001	1.02600E-002	0.00000E+000	3.19393E+001
Rollers							0.00000E+000	2.07437E+001	2.07437E+001	6.71000E-003	0.00000E+000	2.08846E+001
Tractors/Loaders/ Backhoes							0.00000E+000	1.28923E+002	1.28923E+002	4.17000E-002	0.00000E+000	1.29798E+002
Welders							0.00000E+000	3.38797E+001	3.38797E+001	5.01000E-003	0.00000E+000	3.39849E+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							0.00000E+000	4.46819E+000	4.46819E+000	3.50000E-004	0.00000E+000	4.47545E+000
Cranes							0.00000E+000	7.81125E+001	7.81125E+001	2.52600E-002	0.00000E+000	7.86430E+001
Forklifts							0.00000E+000	7.25172E+001	7.25172E+001	2.34500E-002	0.00000E+000	7.30098E+001
Generator Sets							0.00000E+000	1.01737E+002	1.01737E+002	5.73000E-003	0.00000E+000	1.01858E+002
Pavers							0.00000E+000	3.57417E+001	3.57417E+001	1.15600E-002	0.00000E+000	3.59845E+001
Paving Equipment							0.00000E+000	3.17238E+001	3.17238E+001	1.02600E-002	0.00000E+000	3.19393E+001
Rollers							0.00000E+000	2.07436E+001	2.07436E+001	6.71000E-003	0.00000E+000	2.08845E+001
Tractors/Loaders/Backhoes							0.00000E+000	1.28923E+002	1.28923E+002	4.17000E-002	0.00000E+000	1.29798E+002
Welders							0.00000E+000	3.38797E+001	3.38797E+001	5.01000E-003	0.00000E+000	3.39848E+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	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.23441E-006
Cranes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.15218E-006	1.15218E-006	0.00000E+000	0.00000E+000	1.27157E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.24108E-006	1.24108E-006	0.00000E+000	0.00000E+000	1.09574E-006
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.17951E-006	1.17951E-006	0.00000E+000	0.00000E+000	1.17811E-006
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.11914E-006	1.11914E-006	0.00000E+000	0.00000E+000	1.11159E-006
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.26088E-006	1.26088E-006	0.00000E+000	0.00000E+000	1.25238E-006
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.44622E-006	1.44622E-006	0.00000E+000	0.00000E+000	9.57646E-007
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.16349E-006	1.16349E-006	0.00000E+000	0.00000E+000	1.23268E-006
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.18065E-006	1.18065E-006	0.00000E+000	0.00000E+000	1.17699E-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				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	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

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, Annual

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.

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle 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	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
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	20.00	120.00
tblConstructionPhase	NumDays	300.00	180.00
tblConstructionPhase	NumDays	20.00	180.00
tblConstructionPhase	PhaseEndDate	5/28/2021	12/11/2020
tblConstructionPhase	PhaseEndDate	8/20/2021	12/11/2020
tblConstructionPhase	PhaseStartDate	12/12/2020	6/29/2020
tblConstructionPhase	PhaseStartDate	12/12/2020	4/6/2020
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	NumberNoFireplace	3.50	7.60
tblFireplaces	NumberWood	12.25	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	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

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020											0.0000	631.3832	631.3832	0.1603	0.0000	634.7488
Total											**0.0000**	**631.3832**	**631.3832**	**0.1603**	**0.0000**	**634.7488**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020											0.0000	631.3825	631.3825	0.1603	0.0000	634.7481
Total											**0.0000**	**631.3825**	**631.3825**	**0.1603**	**0.0000**	**634.7481**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.4245**	**0.4245**	**4.1000e-004**	**0.0000**	**0.4332**

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	tons/yr										MT/yr					
Area											0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.4245**	**0.4245**	**4.1000e-004**	**0.0000**	**0.4332**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	4/6/2020	12/11/2020	5	180	
2	Paving	Paving	4/6/2020	12/11/2020	5	180	
3	Architectural Coating	Architectural Coating	6/29/2020	12/11/2020	5	120	

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	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	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 - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	415.1698	415.1698	0.1012	0.0000	417.2940
Total											**0.0000**	**415.1698**	**415.1698**	**0.1012**	**0.0000**	**417.2940**

3.2 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	7.2065	7.2065	5.0000e-005	0.0000	7.2076
Worker											0.0000	7.4832	7.4832	3.6000e-004	0.0000	7.4907
Total											**0.0000**	**14.6897**	**14.6897**	**4.1000e-004**	**0.0000**	**14.6982**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	415.1693	415.1693	0.1012	0.0000	417.2935
Total											**0.0000**	**415.1693**	**415.1693**	**0.1012**	**0.0000**	**417.2935**

3.2 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	7.2065	7.2065	5.0000e-005	0.0000	7.2076
Worker											0.0000	7.4832	7.4832	3.6000e-004	0.0000	7.4907
Total											**0.0000**	**14.6897**	**14.6897**	**4.1000e-004**	**0.0000**	**14.6982**

3.3 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	176.4185	176.4185	0.0571	0.0000	177.6167
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**176.4185**	**176.4185**	**0.0571**	**0.0000**	**177.6167**

3.3 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	8.6344	8.6344	4.1000e-004	0.0000	8.6431
Total											**0.0000**	**8.6344**	**8.6344**	**4.1000e-004**	**0.0000**	**8.6431**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	176.4183	176.4183	0.0571	0.0000	177.6165
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**176.4183**	**176.4183**	**0.0571**	**0.0000**	**177.6165**

3.3 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	8.6344	8.6344	4.1000e-004	0.0000	8.6431
Total											**0.0000**	**8.6344**	**8.6344**	**4.1000e-004**	**0.0000**	**8.6431**

3.4 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	15.3195	15.3195	1.1900e-003	0.0000	15.3444
Total											**0.0000**	**15.3195**	**15.3195**	**1.1900e-003**	**0.0000**	**15.3444**

3.4 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.1513	1.1513	5.0000e-005	0.0000	1.1524
Total											**0.0000**	**1.1513**	**1.1513**	**5.0000e-005**	**0.0000**	**1.1524**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	15.3195	15.3195	1.1900e-003	0.0000	15.3444
Total											**0.0000**	**15.3195**	**15.3195**	**1.1900e-003**	**0.0000**	**15.3444**

3.4 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.1513	1.1513	5.0000e-005	0.0000	1.1524
Total											**0.0000**	**1.1513**	**1.1513**	**5.0000e-005**	**0.0000**	**1.1524**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
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

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

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	tons/yr										MT/yr					
Single Family Housing	0											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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**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	tons/yr										MT/yr					
Mitigated											0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Unmitigated											0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Total											**0.0000**	**0.4245**	**0.4245**	**4.1000e-004**	**0.0000**	**0.4332**

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	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Total											**0.0000**	**0.4245**	**0.4245**	**4.1000e-004**	**0.0000**	**0.4332**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	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
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							0.00000E+000	1.53195E+001	1.53195E+001	1.19000E-003	0.00000E+000	1.53444E+001
Cranes							0.00000E+000	7.81126E+001	7.81126E+001	2.52600E-002	0.00000E+000	7.86431E+001
Forklifts							0.00000E+000	7.25173E+001	7.25173E+001	2.34500E-002	0.00000E+000	7.30098E+001
Generator Sets							0.00000E+000	1.01737E+002	1.01737E+002	5.73000E-003	0.00000E+000	1.01858E+002
Pavers							0.00000E+000	7.14835E+001	7.14835E+001	2.31200E-002	0.00000E+000	7.19690E+001
Paving Equipment							0.00000E+000	6.34477E+001	6.34477E+001	2.05200E-002	0.00000E+000	6.38786E+001
Rollers							0.00000E+000	4.14873E+001	4.14873E+001	1.34200E-002	0.00000E+000	4.17691E+001
Tractors/Loaders/ Backhoes							0.00000E+000	1.28923E+002	1.28923E+002	4.17000E-002	0.00000E+000	1.29798E+002
Welders							0.00000E+000	3.38797E+001	3.38797E+001	5.01000E-003	0.00000E+000	3.39849E+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							0.00000E+000	1.53195E+001	1.53195E+001	1.19000E-003	0.00000E+000	1.53444E+001
Cranes							0.00000E+000	7.81125E+001	7.81125E+001	2.52600E-002	0.00000E+000	7.86430E+001
Forklifts							0.00000E+000	7.25172E+001	7.25172E+001	2.34500E-002	0.00000E+000	7.30098E+001
Generator Sets							0.00000E+000	1.01737E+002	1.01737E+002	5.73000E-003	0.00000E+000	1.01858E+002
Pavers							0.00000E+000	7.14834E+001	7.14834E+001	2.31200E-002	0.00000E+000	7.19689E+001
Paving Equipment							0.00000E+000	6.34476E+001	6.34476E+001	2.05200E-002	0.00000E+000	6.38785E+001
Rollers							0.00000E+000	4.14873E+001	4.14873E+001	1.34200E-002	0.00000E+000	4.17691E+001
Tractors/Loaders/Backhoes							0.00000E+000	1.28923E+002	1.28923E+002	4.17000E-002	0.00000E+000	1.29798E+002
Welders							0.00000E+000	3.38797E+001	3.38797E+001	5.01000E-003	0.00000E+000	3.39848E+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	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.30552E-006	1.30552E-006	0.00000E+000	0.00000E+000	1.30340E-006
Cranes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.15218E-006	1.15218E-006	0.00000E+000	0.00000E+000	1.27157E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.24108E-006	1.24108E-006	0.00000E+000	0.00000E+000	1.09574E-006
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.17951E-006	1.17951E-006	0.00000E+000	0.00000E+000	1.17811E-006
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.11914E-006	1.11914E-006	0.00000E+000	0.00000E+000	1.11159E-006
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.10327E-006	1.10327E-006	0.00000E+000	0.00000E+000	1.25238E-006
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	9.64150E-007	9.64150E-007	0.00000E+000	0.00000E+000	1.19706E-006
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.16349E-006	1.16349E-006	0.00000E+000	0.00000E+000	1.23268E-006
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.18065E-006	1.18065E-006	0.00000E+000	0.00000E+000	1.17699E-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				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	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

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, Annual

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.

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle 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 -

Trips and VMT -

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	90.00
tblConstructionPhase	NumDays	440.00	180.00
tblConstructionPhase	NumDays	35.00	180.00
tblConstructionPhase	PhaseEndDate	1/14/2022	9/9/2021
tblConstructionPhase	PhaseEndDate	5/20/2022	9/10/2021
tblConstructionPhase	PhaseStartDate	9/11/2021	5/7/2021
tblConstructionPhase	PhaseStartDate	9/11/2021	1/4/2021
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	NumberNoFireplace	7.60	6.90
tblFireplaces	NumberWood	26.60	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	88.97	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	4,951,705.95	0.00
tblWater	OutdoorWaterUseRate	2,978,703.37	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

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021											0.0000	911.5184	911.5184	0.2107	0.0000	915.9440
Total											**0.0000**	**911.5184**	**911.5184**	**0.2107**	**0.0000**	**915.9440**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021											0.0000	911.5175	911.5175	0.2107	0.0000	915.9430
Total											**0.0000**	**911.5175**	**911.5175**	**0.2107**	**0.0000**	**915.9430**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.9218**	**0.9218**	**9.0000e-004**	**0.0000**	**0.9407**

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	tons/yr										MT/yr					
Area											0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Energy											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
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.9218**	**0.9218**	**9.0000e-004**	**0.0000**	**0.9407**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/4/2021	9/10/2021	5	180	
2	Paving	Paving	1/4/2021	9/10/2021	5	180	
3	Architectural Coating	Architectural Coating	5/7/2021	9/9/2021	5	90	

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: 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	73.00	26.00	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 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	622.8287	622.8287	0.1501	0.0000	625.9797
Total											**0.0000**	**622.8287**	**622.8287**	**0.1501**	**0.0000**	**625.9797**

3.2 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	46.7673	46.7673	3.5000e-004	0.0000	46.7745
Worker											0.0000	41.3199	41.3199	1.9200e-003	0.0000	41.3603
Total											**0.0000**	**88.0872**	**88.0872**	**2.2700e-003**	**0.0000**	**88.1348**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	622.8279	622.8279	0.1501	0.0000	625.9789
Total											**0.0000**	**622.8279**	**622.8279**	**0.1501**	**0.0000**	**625.9789**

3.2 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	46.7673	46.7673	3.5000e-004	0.0000	46.7745
Worker											0.0000	41.3199	41.3199	1.9200e-003	0.0000	41.3603
Total											**0.0000**	**88.0872**	**88.0872**	**2.2700e-003**	**0.0000**	**88.1348**

3.3 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	176.3774	176.3774	0.0570	0.0000	177.5753
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**176.3774**	**176.3774**	**0.0570**	**0.0000**	**177.5753**

3.3 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	8.4904	8.4904	3.9000e-004	0.0000	8.4987
Total											**0.0000**	**8.4904**	**8.4904**	**3.9000e-004**	**0.0000**	**8.4987**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	176.3772	176.3772	0.0570	0.0000	177.5751
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**176.3772**	**176.3772**	**0.0570**	**0.0000**	**177.5751**

3.3 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	8.4904	8.4904	3.9000e-004	0.0000	8.4987
Total											**0.0000**	**8.4904**	**8.4904**	**3.9000e-004**	**0.0000**	**8.4987**

3.4 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	11.4896	11.4896	7.9000e-004	0.0000	11.5062
Total											**0.0000**	**11.4896**	**11.4896**	**7.9000e-004**	**0.0000**	**11.5062**

3.4 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	4.2452	4.2452	2.0000e-004	0.0000	4.2493
Total											**0.0000**	**4.2452**	**4.2452**	**2.0000e-004**	**0.0000**	**4.2493**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	11.4896	11.4896	7.9000e-004	0.0000	11.5062
Total											**0.0000**	**11.4896**	**11.4896**	**7.9000e-004**	**0.0000**	**11.5062**

3.4 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	4.2452	4.2452	2.0000e-004	0.0000	4.2493
Total											**0.0000**	**4.2452**	**4.2452**	**2.0000e-004**	**0.0000**	**4.2493**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
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	tons/yr										MT/yr					
Electricity Mitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated											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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**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	tons/yr										MT/yr					
Mitigated											0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Unmitigated											0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Total											**0.0000**	**0.9218**	**0.9218**	**9.0000e-004**	**0.0000**	**0.9407**

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	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Total											**0.0000**	**0.9218**	**0.9218**	**9.0000e-004**	**0.0000**	**0.9407**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	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
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							0.00000E+000	1.14896E+001	1.14896E+001	7.90000E-004	0.00000E+000	1.15062E+001
Cranes							0.00000E+000	1.17158E+002	1.17158E+002	3.78900E-002	0.00000E+000	1.17954E+002
Forklifts							0.00000E+000	1.08776E+002	1.08776E+002	3.51800E-002	0.00000E+000	1.09515E+002
Generator Sets							0.00000E+000	1.52606E+002	1.52606E+002	7.79000E-003	0.00000E+000	1.52770E+002
Pavers							0.00000E+000	7.14504E+001	7.14504E+001	2.31100E-002	0.00000E+000	7.19356E+001
Paving Equipment							0.00000E+000	6.34360E+001	6.34360E+001	2.05200E-002	0.00000E+000	6.38669E+001
Rollers							0.00000E+000	4.14910E+001	4.14910E+001	1.34200E-002	0.00000E+000	4.17728E+001
Tractors/Loaders/ Backhoes							0.00000E+000	1.93469E+002	1.93469E+002	6.25700E-002	0.00000E+000	1.94783E+002
Welders							0.00000E+000	5.08196E+001	5.08196E+001	6.62000E-003	0.00000E+000	5.09585E+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							0.00000E+000	1.14896E+001	1.14896E+001	7.90000E-004	0.00000E+000	1.15062E+001
Cranes							0.00000E+000	1.17158E+002	1.17158E+002	3.78900E-002	0.00000E+000	1.17954E+002
Forklifts							0.00000E+000	1.08776E+002	1.08776E+002	3.51800E-002	0.00000E+000	1.09515E+002
Generator Sets							0.00000E+000	1.52606E+002	1.52606E+002	7.79000E-003	0.00000E+000	1.52769E+002
Pavers							0.00000E+000	7.14503E+001	7.14503E+001	2.31100E-002	0.00000E+000	7.19355E+001
Paving Equipment							0.00000E+000	6.34359E+001	6.34359E+001	2.05200E-002	0.00000E+000	6.38668E+001
Rollers							0.00000E+000	4.14910E+001	4.14910E+001	1.34200E-002	0.00000E+000	4.17728E+001
Tractors/Loaders/Backhoes							0.00000E+000	1.93469E+002	1.93469E+002	6.25700E-002	0.00000E+000	1.94783E+002
Welders							0.00000E+000	5.08195E+001	5.08195E+001	6.62000E-003	0.00000E+000	5.09585E+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	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	8.70349E-007	8.70349E-007	0.00000E+000	0.00000E+000	8.69097E-007
Cranes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.19497E-006	1.19497E-006	0.00000E+000	0.00000E+000	1.18690E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.19512E-006	1.19512E-006	0.00000E+000	0.00000E+000	1.18705E-006
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.17951E-006	1.17951E-006	0.00000E+000	0.00000E+000	1.17825E-006
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.11966E-006	1.11966E-006	0.00000E+000	0.00000E+000	1.25112E-006
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.26111E-006	1.26111E-006	0.00000E+000	0.00000E+000	1.09603E-006
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20508E-006	1.20508E-006	0.00000E+000	0.00000E+000	1.19695E-006
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.18882E-006	1.18882E-006	0.00000E+000	0.00000E+000	1.18080E-006
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.18065E-006	1.18065E-006	0.00000E+000	0.00000E+000	1.17743E-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				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	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	0.20	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	

Appendix B

ROADWAY CONSTRUCTION EMISSION DATA

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Valiano Project Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	2.7	14.9	26.7	8.2	1.2	7.0	2.5	1.1	1.5	3,205.9
Grading/Excavation	2.7	16.8	31.9	8.3	1.3	7.0	2.6	1.1	1.5	5,401.8
Drainage/Utilities/Sub-Grade	2.6	15.0	25.4	8.3	1.3	7.0	2.6	1.2	1.5	3,416.4
Paving	0.9	8.5	7.6	0.4	0.4	-	0.4	0.4	-	1,630.4
Maximum (pounds/day)	2.7	16.8	31.9	8.3	1.3	7.0	2.6	1.2	1.5	5,401.8
Total (tons/construction project)	0.1	0.7	1.2	0.4	0.1	0.3	0.1	0.0	0.1	191.4

Notes: Project Start Year -> 2019
Project Length (months) -> 5
Total Project Area (acres) -> 3
Maximum Area Disturbed/Day (acres) -> 1
Total Soil Imported/Exported (yd^3/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 Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	1.2	6.8	12.1	3.7	0.5	3.2	1.1	0.5	0.7	1,457.2
Grading/Excavation	1.2	7.6	14.5	3.8	0.6	3.2	1.2	0.5	0.7	2,455.3
Drainage/Utilities/Sub-Grade	1.2	6.8	11.5	3.8	0.6	3.2	1.2	0.5	0.7	1,552.9
Paving	0.4	3.9	3.4	0.2	0.2	-	0.2	0.2	-	741.1
Maximum (kilograms/day)	1.2	7.6	14.5	3.8	0.6	3.2	1.2	0.5	0.7	2,455.3
Total (megagrams/construction project)	0.1	0.7	1.1	0.3	0.1	0.3	0.1	0.0	0.1	173.6

Notes: Project Start Year -> 2019
Project Length (months) -> 5
Total Project Area (hectares) -> 1
Maximum Area Disturbed/Day (hectares) -> 0
Total Soil Imported/Exported ($meters^3$/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 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.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

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.

Input Type

Project Name	Valiano Project	
Construction Start Year	2019	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	4.54	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)

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	2005	%	2006	%	2007	%
Grubbing/Land Clearing	0.45	0.45	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	1.82	2.04	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	1.36	1.36	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.91	0.68	0.00	0.00	0.00	0.00	0.00	0.00
Totals	4.54	4.54						

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)	0.15	5.88	0.69	0.16	0.09	1596.49
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.16	6.02	0.71	0.16	0.09	1635.18
Tons per contruction period	0.00	0.12	0.01	0.00	0.00	32.74

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)	0.112	0.140	1.291	0.047	0.020	441.739
Emission rate - Grading/Excavation (grams/mile)	0.112	0.140	1.291	0.047	0.020	441.739
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.112	0.140	1.291	0.047	0.020	441.739
Emission rate - Paving (grams/mile)	0.112	0.140	1.291	0.047	0.020	441.739
Emission rate - Grubbing/Land Clearing (grams/trip)	0.382	0.228	3.101	0.004	0.003	95.822
Emission rate - Grading/Excavation (grams/trip)	0.382	0.228	3.101	0.004	0.003	95.822
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.382	0.228	3.101	0.004	0.003	95.822
Emission rate - Paving (grams/trip)	0.382	0.228	3.101	0.004	0.003	95.822
Pounds per day - Grubbing/Land Clearing	0.058	0.067	0.637	0.021	0.009	196.709
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.003	0.000	0.000	0.974
Pounds per day - Grading/Excavation	0.202	0.234	2.230	0.072	0.031	688.483
Tons per const. Period - Grading/Excavation	0.004	0.005	0.045	0.001	0.001	13.783
Pounds per day - Drainage/Utilities/Sub-Grade	0.173	0.200	1.911	0.062	0.026	590.128
Tons per const. Period - Drain/Util/Sub-Grade	0.003	0.003	0.029	0.001	0.000	8.828
Pounds per day - Paving	0.130	0.150	1.433	0.047	0.020	442.596
Tons per const. Period - Paving	0.001	0.002	0.014	0.000	0.000	4.430
tons per construction period	0.008	0.010	0.091	0.003	0.001	28.016

Water truck default values can be overriden 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)	0.15	5.88	0.69	0.16	0.09	1596.49
Emission rate - Grading/Excavation (grams/mile)	0.15	5.88	0.69	0.16	0.09	1596.49
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.15	5.88	0.69	0.16	0.09	1596.49
Pounds per day - Grubbing/Land Clearing	0.01	0.52	0.06	0.01	0.01	140.66
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	0.70
Pound per day - Grading/Excavation	0.01	0.52	0.06	0.01	0.01	140.66
Tons per const. Period - Grading/Excavation	0.00	0.01	0.00	0.00	0.00	2.82
Pound per day - Drainage/Utilities/Subgrade	0.01	0.52	0.06	0.01	0.01	140.66
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.01	0.00	0.00	0.00	2.10

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	0.2	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 Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	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
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	1.07	4.42	10.93	0.50	0.46	945.64
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Scrapers	1.10	7.25	12.78	0.50	0.46	1608.00
	2	Signal Boards	0.49	2.51	2.37	0.13	0.12	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	2.7	14.2	26.1	1.1	1.0	2868.5
	Grubbing/Land Clearing	tons per phase	0.0	0.1	0.1	0.0	0.0	14.2

Grading/Excavation	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	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
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	0.80	3.46	7.57	0.42	0.39	666.91
		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	0.41	3.11	4.77	0.16	0.15	662.53
1.00	2	Scrapers	1.10	7.25	12.78	0.50	0.46	1608.00
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
	Grading/Excavation	pounds per day	2.3	13.8	25.1	1.1	1.0	2937.4
	Grading	tons per phase	0.0	0.3	0.5	0.0	0.0	58.8

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		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	0.80	3.46	7.57	0.42	0.39	666.91
		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	1.10	7.25	12.78	0.50	0.46	1608.00
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
1.00		Trenchers	0.47	2.09	4.07	0.31	0.28	376.26
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	2.4	13.0	24.7	1.2	1.1	2685.6
	Drainage	tons per phase	0.0	0.2	0.4	0.0	0.0	40.2

Paving	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	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	0.29	2.84	2.99	0.15	0.13	482.15
	1	Paving Equipment	0.22	2.69	2.20	0.11	0.10	426.26
		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	0.24	1.51	2.22	0.15	0.13	279.44
		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	0.7	7.0	7.4	0.4	0.4	1187.8
	Paving	tons per phase	0.0	0.1	0.1	0.0	0.0	11.9
Total Emissions all Phases (tons per construction period) =>			0.1	0.6	1.1	0.0	0.0	125.1

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 CALCULATION DATA

Drilling and Blasting

			Blast Frequency			
ID	Source	holes/blast	blasts/day	blasts/month	blasts/ year	Tons ANFO/ Blast
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:
1. 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.
2. Emissions factor for PM2.5 is calculated based on a similar mechanical process for aggreagte roock 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 us 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 lb/hole x 0.185 = 0.12 lb/hole.
3. Control Efficiency estimated to be between 63% and 88%, based on drill rotoclone or similar dust shroud device. Assumed midpoint of range reported.
4. 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$10um 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$2.5um 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 lb/blast) x (1 blast/hr) = 0.058 lb/hr
Blasting PM10 = (0.058 lb/day) x (5 blasts/day) = 0.29 lb/day
Blasting PM10 = (0.29 lb/day) x (40 blast/year) / (2,000 lb/ton) = 0.0058 ton/year

5. 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.
6. 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.
7. 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:
1. 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, $3*10^{-3}$ kg/MMBtu, and $6*10^{-4}$ 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.
2. 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.
3. Based on 5 blasts per day, for the maximum daily PTE.

Appendix D

CALEEMOD OPERATION EMISSION DATA

Valiano - 2021 Operations (100 Percent Solar)

San Diego County, Annual

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
Apartments Low Rise	54.00	Dwelling Unit	3.38	54,000.00	154

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2021
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 2015/16

Woodstoves - No woodburning hearths

Area Mitigation -

Energy Mitigation - CalEEMod default is 2008 T24. 2013 is 25% improved over 2008. 2016 is 28% improved over 2013. (1-.25)*(1-.28)=54% - 46% improvement

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	29.70	0.00
tblFireplaces	NumberGas	183.70	300.60
tblFireplaces	NumberNoFireplace	5.40	54.00
tblFireplaces	NumberWood	18.90	0.00
tblFireplaces	NumberWood	116.90	0.00
tblProjectCharacteristics	OperationalYear	2014	2021
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	HO_TL	7.50	7.05
tblVehicleTrips	HO_TL	7.50	7.05
tblVehicleTrips	HS_TL	7.30	7.05
tblVehicleTrips	HS_TL	7.30	7.05
tblVehicleTrips	HW_TL	10.80	7.05
tblVehicleTrips	HW_TL	10.80	7.05

tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	ST_TR	7.16	6.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	10.37
tblVehicleTrips	SU_TR	6.07	6.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	10.37
tblVehicleTrips	WD_TR	6.59	6.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	10.37
tblWoodstoves	NumberCatalytic	2.70	0.00
tblWoodstoves	NumberCatalytic	16.70	0.00
tblWoodstoves	NumberNoncatalytic	2.70	0.00
tblWoodstoves	NumberNoncatalytic	16.70	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	241.4736	241.4736	9.1000e-003	4.3400e-003	243.0103
Energy											0.0000	1,365.6790	1,365.6790	0.0439	0.0166	1,371.7521
Mobile											0.0000	3,650.7318	3,650.7318	0.1380	0.0000	3,653.6292
Waste											84.5843	0.0000	84.5843	4.9988	0.0000	189.5589
Water											8.0201	180.5819	188.6020	0.8310	0.0210	212.5490
Total											**92.6044**	**5,438.4662**	**5,531.0706**	**6.0208**	**0.0419**	**5,670.4994**

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	tons/yr										MT/yr					
Area											0.0000	241.4736	241.4736	9.1000e-003	4.3400e-003	243.0103
Energy											0.0000	333.9565	333.9565	6.4000e-003	6.1200e-003	335.9889
Mobile											0.0000	3,650.7318	3,650.7318	0.1380	0.0000	3,653.6292
Waste											63.4382	0.0000	63.4382	3.7491	0.0000	142.1692
Water											6.4161	141.4785	147.8946	0.6647	0.0167	167.0419
Total											**69.8543**	**4,367.6404**	**4,437.4947**	**4.5673**	**0.0272**	**4,541.8395**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**24.57**	**19.69**	**19.77**	**24.14**	**35.10**	**19.90**

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	1/1/2017	12/30/2016	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	Excavators	3	8.00	162	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
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	tons/yr										MT/yr					
Mitigated											0.0000	3,650.7318	3,650.7318	0.1380	0.0000	3,653.6292
Unmitigated											0.0000	3,650.7318	3,650.7318	0.1380	0.0000	3,653.6292

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	324.00	324.00	324.00	831,449	831,449
City Park	0.00	0.00	0.00		
Single Family Housing	3,462.00	3,462.00	3462.00	8,884,185	8,884,185
Total	3,786.00	3,786.00	3,786.00	9,715,634	9,715,634

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	7.05	7.05	7.05	41.60	18.80	39.60	100	0	0
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	7.05	7.05	7.05	41.60	18.80	39.60	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.512811	0.073496	0.191363	0.130940	0.036084	0.005147	0.012550	0.023118	0.001871	0.002053	0.006546	0.000576	0.003444

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
NaturalGas Mitigated											0.0000	333.9565	333.9565	6.4000e-003	6.1200e-003	335.9889
NaturalGas Unmitigated											0.0000	523.9563	523.9563	0.0100	9.6100e-003	527.1450
Electricity Mitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated											0.0000	841.7227	841.7227	0.0339	7.0100e-003	844.6072

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	582304											0.0000	31.0739	31.0739	6.0000e-004	5.7000e-004	31.2631
City Park	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	9.23627e+006											0.0000	492.8823	492.8823	9.4500e-003	9.0400e-003	495.8819
Total												**0.0000**	**523.9563**	**523.9563**	**0.0101**	**9.6100e-003**	**527.1450**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	376494											0.0000	20.0912	20.0912	3.9000e-004	3.7000e-004	20.2134
City Park	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	5.88161e+006											0.0000	313.8654	313.8654	6.0200e-003	5.7500e-003	315.7755
Total												**0.0000**	**333.9565**	**333.9565**	**6.4100e-003**	**6.1200e-003**	**335.9889**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	196076	64.0792	2.5800e-003	5.3000e-004	64.2988
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2.37951e+006	777.6435	0.0313	6.4800e-003	780.3083
Total		**841.7227**	**0.0339**	**7.0100e-003**	**844.6072**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	0	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	241.4736	241.4736	9.1000e-003	4.3400e-003	243.0103
Unmitigated											0.0000	241.4736	241.4736	9.1000e-003	4.3400e-003	243.0103

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	236.7675	236.7675	4.5400e-003	4.3400e-003	238.2085
Landscaping											0.0000	4.7060	4.7060	4.5600e-003	0.0000	4.8018
Total											**0.0000**	**241.4736**	**241.4736**	**9.1000e-003**	**4.3400e-003**	**243.0103**

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	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	236.7675	236.7675	4.5400e-003	4.3400e-003	238.2085
Landscaping											0.0000	4.7060	4.7060	4.5600e-003	0.0000	4.8018
Total											**0.0000**	**241.4736**	**241.4736**	**9.1000e-003**	**4.3400e-003**	**243.0103**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	188.6020	0.8310	0.0210	212.5490
Mitigated	147.8946	0.6647	0.0167	167.0419

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	3.51832 / 2.21807	24.1414	0.1156	2.9000e-003	27.4670
City Park	0 / 4.17018	15.1413	6.1000e-004	1.3000e-004	15.1932
Single Family Housing	21.7614 / 13.7192	149.3192	0.7148	0.0179	169.8887
Total		**188.6020**	**0.8310**	**0.0210**	**212.5490**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	2.81465 / 1.77446	18.8974	0.0924	2.3200e-003	21.5565
City Park	0 / 3.33615	12.1130	4.9000e-004	1.0000e-004	12.1546
Single Family Housing	17.4092 / 10.9753	116.8841	0.5718	0.0143	133.3309
Total		**147.8946**	**0.6647**	**0.0167**	**167.0419**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	63.4382	3.7491	0.0000	142.1692
Unmitigated	84.5843	4.9988	0.0000	189.5589

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	24.84	5.0423	0.2980	0.0000	11.3001
City Park	0.3	0.0609	3.6000e-003	0.0000	0.1365
Single Family Housing	391.55	79.4811	4.6972	0.0000	178.1223
Total		**84.5843**	**4.9988**	**0.0000**	**189.5589**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	18.63	3.7817	0.2235	0.0000	8.4751
City Park	0.225	0.0457	2.7000e-003	0.0000	0.1024
Single Family Housing	293.663	59.6108	3.5229	0.0000	133.5917
Total		**63.4382**	**3.7491**	**0.0000**	**142.1692**

9.0 Operational Offroad

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

10.0 Vegetation

Valiano - 2021 Operations (80 Percent Solar)

San Diego County, Annual

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
Apartments Low Rise	54.00	Dwelling Unit	3.38	54,000.00	154
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**	2021
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 2015/16

Woodstoves - No woodburning hearths

Area Mitigation -

Energy Mitigation - CalEEMod default is 2008 T24. 2013 is 25% improved over 2008. 2016 is 28% improved over 2013. (1-.25)*(1-.28)=54% - 46% improvement

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	29.70	0.00
tblFireplaces	NumberGas	183.70	300.60
tblFireplaces	NumberNoFireplace	5.40	54.00
tblFireplaces	NumberWood	18.90	0.00
tblFireplaces	NumberWood	116.90	0.00
tblProjectCharacteristics	OperationalYear	2014	2021
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	HO_TL	7.50	7.05
tblVehicleTrips	HO_TL	7.50	7.05
tblVehicleTrips	HS_TL	7.30	7.05
tblVehicleTrips	HS_TL	7.30	7.05
tblVehicleTrips	HW_TL	10.80	7.05
tblVehicleTrips	HW_TL	10.80	7.05

tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	ST_TR	7.16	6.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	10.37
tblVehicleTrips	SU_TR	6.07	6.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	10.37
tblVehicleTrips	WD_TR	6.59	6.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	10.37
tblWoodstoves	NumberCatalytic	2.70	0.00
tblWoodstoves	NumberCatalytic	16.70	0.00
tblWoodstoves	NumberNoncatalytic	2.70	0.00
tblWoodstoves	NumberNoncatalytic	16.70	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	241.4736	241.4736	9.1000e-003	4.3400e-003	243.0103
Energy											0.0000	1,365.6790	1,365.6790	0.0439	0.0166	1,371.7521
Mobile											0.0000	3,650.7318	3,650.7318	0.1380	0.0000	3,653.6292
Waste											84.5843	0.0000	84.5843	4.9988	0.0000	189.5589
Water											8.0201	180.5819	188.6020	0.8310	0.0210	212.5490
Total											**92.6044**	**5,438.4662**	**5,531.0706**	**6.0208**	**0.0419**	**5,670.4994**

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	tons/yr										MT/yr					
Area											0.0000	241.4736	241.4736	9.1000e-003	4.3400e-003	243.0103
Energy											0.0000	492.0296	492.0296	0.0128	7.4400e-003	494.6037
Mobile											0.0000	3,650.7318	3,650.7318	0.1380	0.0000	3,653.6292
Waste											63.4382	0.0000	63.4382	3.7491	0.0000	142.1692
Water											6.4161	141.4785	147.8946	0.6647	0.0167	167.0419
Total											**69.8543**	**4,525.7134**	**4,595.5677**	**4.5736**	**0.0285**	**4,700.4542**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**24.57**	**16.78**	**16.91**	**24.04**	**31.95**	**17.11**

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	1/1/2017	12/30/2016	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	tons/yr										MT/yr					
Mitigated											0.0000	3,650.7318	3,650.7318	0.1380	0.0000	3,653.6292
Unmitigated											0.0000	3,650.7318	3,650.7318	0.1380	0.0000	3,653.6292

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	324.00	324.00	324.00	831,449	831,449
City Park	0.00	0.00	0.00		
Single Family Housing	3,462.00	3,462.00	3462.00	8,884,185	8,884,185
Total	3,786.00	3,786.00	3,786.00	9,715,634	9,715,634

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	7.05	7.05	7.05	41.60	18.80	39.60	100	0	0
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	7.05	7.05	7.05	41.60	18.80	39.60	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.512811	0.073496	0.191363	0.130940	0.036084	0.005147	0.012550	0.023118	0.001871	0.002053	0.006546	0.000576	0.003444

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
NaturalGas Mitigated											0.0000	333.9565	333.9565	6.4000e-003	6.1200e-003	335.9889
NaturalGas Unmitigated											0.0000	523.9563	523.9563	0.0100	9.6100e-003	527.1450
Electricity Mitigated											0.0000	158.0731	158.0731	6.3600e-003	1.3200e-003	158.6148
Electricity Unmitigated											0.0000	841.7227	841.7227	0.0339	7.0100e-003	844.6072

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	582304											0.0000	31.0739	31.0739	6.0000e-004	5.7000e-004	31.2631
City Park	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	9.23627e+006											0.0000	492.8823	492.8823	9.4500e-003	9.0400e-003	495.8819
Total												**0.0000**	**523.9563**	**523.9563**	**0.0101**	**9.6100e-003**	**527.1450**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	376494											0.0000	20.0912	20.0912	3.9000e-004	3.7000e-004	20.2134
City Park	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	5.88161e+006											0.0000	313.8654	313.8654	6.0200e-003	5.7500e-003	315.7755
Total												**0.0000**	**333.9565**	**333.9565**	**6.4100e-003**	**6.1200e-003**	**335.9889**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	196076	64.0792	2.5800e-003	5.3000e-004	64.2988
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2.37951e+006	777.6435	0.0313	6.4800e-003	780.3083
Total		**841.7227**	**0.0339**	**7.0100e-003**	**844.6072**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	36984.5	12.0869	4.9000e-004	1.0000e-004	12.1283
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	446702	145.9862	5.8800e-003	1.2200e-003	146.4865
Total		**158.0731**	**6.3700e-003**	**1.3200e-003**	**158.6148**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	241.4736	241.4736	9.1000e-003	4.3400e-003	243.0103
Unmitigated											0.0000	241.4736	241.4736	9.1000e-003	4.3400e-003	243.0103

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	236.7675	236.7675	4.5400e-003	4.3400e-003	238.2085
Landscaping											0.0000	4.7060	4.7060	4.5600e-003	0.0000	4.8018
Total											**0.0000**	**241.4736**	**241.4736**	**9.1000e-003**	**4.3400e-003**	**243.0103**

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	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	236.7675	236.7675	4.5400e-003	4.3400e-003	238.2085
Landscaping											0.0000	4.7060	4.7060	4.5600e-003	0.0000	4.8018
Total											**0.0000**	**241.4736**	**241.4736**	**9.1000e-003**	**4.3400e-003**	**243.0103**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	188.6020	0.8310	0.0210	212.5490
Mitigated	147.8946	0.6647	0.0167	167.0419

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	3.51832 / 2.21807	24.1414	0.1156	2.9000e-003	27.4670
City Park	0 / 4.17018	15.1413	6.1000e-004	1.3000e-004	15.1932
Single Family Housing	21.7614 / 13.7192	149.3192	0.7148	0.0179	169.8887
Total		**188.6020**	**0.8310**	**0.0210**	**212.5490**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	2.81465 / 1.77446	18.8974	0.0924	2.3200e-003	21.5565
City Park	0 / 3.33615	12.1130	4.9000e-004	1.0000e-004	12.1546
Single Family Housing	17.4092 / 10.9753	116.8841	0.5718	0.0143	133.3309
Total		**147.8946**	**0.6647**	**0.0167**	**167.0419**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	63.4382	3.7491	0.0000	142.1692
Unmitigated	84.5843	4.9988	0.0000	189.5589

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	24.84	5.0423	0.2980	0.0000	11.3001
City Park	0.3	0.0609	3.6000e-003	0.0000	0.1365
Single Family Housing	391.55	79.4811	4.6972	0.0000	178.1223
Total		**84.5843**	**4.9988**	**0.0000**	**189.5589**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	18.63	3.7817	0.2235	0.0000	8.4751
City Park	0.225	0.0457	2.7000e-003	0.0000	0.1024
Single Family Housing	293.663	59.6108	3.5229	0.0000	133.5917
Total		**63.4382**	**3.7491**	**0.0000**	**142.1692**

9.0 Operational Offroad

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

10.0 Vegetation

Appendix E

EMISSION REDUCTION ADJUSTMENTS FOR VALIANO PROJECT

EMISSION REDUCTION ADJUSTMENTS FOR VALIANO PROJECT

Methodology for Calculating Reduction Credits for the Mitigated Project (Project with Design Features)

Transportation- and energy-related emissions reductions would be achieved partly through state regulations, goals, and policies. Per the County's Guidelines, it is acceptable to apply the reductions from these measures to the Project.

As summarized in Table E-1, reduction credits are based on the CARB Scoping Plan reductions for sector-specific activity. For example, Pavley II reductions counted towards the 2020 target is 4 MMT CO_2e and projected 2020 unmitigated transportation-related emissions is 168.2 MMT CO_2e, therefore, the reduction is 2.38 percent (4 MMT CO_2e/168.2 MMT CO_2e). This percentage reduction can be applied to the Project's transportation emissions.

Table E-1
SCOPING PLAN GHG EMISSION REDUCTIONS
(ANNUAL MMT CO_2e)

Statewide Land Use-Adjusted 2020 GHG Emissions Inventory[1]		AB 32 Scoping Plan GHG Emission Reductions[2]		Percent Reduction
Sector	**Emissions**	**Measure**	**Emissions Reduction**	
Electricity	86.4	Renewable Electricity Standard	9.847	11.4
Transportation	168.2	Pavley II	4.0	2.38

Source: CARB 2014
[1] From CARB's 2020 BAU Forecast
[2] From CARB's Greenhouse Gas Reductions from Ongoing, Adopted and Foreseeable Scoping Plan Measures

Methodology for Calculating Unmitigated and Mitigated Mobile Emissions

The County of San Diego allows the Project to apply GHG reduction credits for Pavley II towards the Project. Therefore, adjustments were made to the CalEEMod model outputs to account for the allowable reduction as shown in Table E-2.

Table E-2 UNCORRECTED AND CORRECTED CALEEMOD OUTPUTS FOR PROJECT EMISSIONS - MOBILE (ANNUAL MT CO_2e)		
Source	**Project Emissions (uncorrected)**	**Project Emissions (corrected)[1]**
Residential Mobile Emissions	3,653.63	3,566.67
WTWRF Mobile Emissions	10.87	10.61

Notes:
All model results include built in emission reductions for Pavley I regulations (model default).
[1] Includes reduction of 2.38% for Pavely II regulations

Methodology for Calculating Unmitigated (Project without Design Features) and Mitigated (Project with Design Features) Energy Emissions

As shown in Table E-1, the Renewable Electricity Standard (RES) would reduce electricity-related emissions by 11.4 percent. CalEEMod defaults do not include reductions from the RES. Emissions for the Project were corrected to include the reduction from this measure. The Project would also include a 10 percent reduction in electricity use from the inclusion of solar panels. This reduction was included in the CalEEMod estimated emissions.

Energy sources in CalEEMod include both electricity and natural gas. In order to appropriately allocate electricity emission reductions relative to the RES and solar panels, these sources were broken out using the detailed breakdown in Appendix A and the reductions were only applied to electricity sources. Table E-3 summarizes adjustments due to state measures and Project design features.

Table E-3 UNCORRECTED AND CORRECTED CALEEMOD OUTPUTS FOR PROJECT EMISSIONS – ENERGY (ANNUAL MT CO_2e)		
Energy Sources	**Mitigated (uncorrected)[1]**	**Mitigated (corrected)[2]**
Residential Development (100% Solar)		
Electricity	0	0
Natural Gas	336	336
Total Energy Sources	336	336
WTWRF		
Electricity	55	49
Natural Gas	11	11
Total Energy Sources	67	60
Residential Development (80% Solar)		
Electricity	159	141
Natural Gas	336	336
Total Energy Sources	**495**	**477**

Notes:
[1] Includes project design features discussed in Section 5.2.3.3.
[2] Includes electricity reduction of 11.4 percent for RES.

Methodology for Calculating Project Water Emissions

The Project would utilize reclaimed water from the proposed WTWRF for outdoor irrigation. Reductions are based on CAPCOA Measure WSW-1 that applies towards projects that include the supply of reclaimed water that would reduce overall energy intensity associated with the conveyance of the potable water supply from outside of San Diego County. The reclaimed water use index measurement is based on the percentage reduction in GHG emissions for non-potable water. As described in CAPCOA Measure WSW-1, the reduction in GHG emissions for projects in Southern California is calculated by the following equation:

$$\text{GHG emission reduction} = \frac{\text{Water}_{\text{reclaimed}}}{\text{Water}_{\text{non-potable total}}} \times 0.81$$

Where:

$\text{Water}_{\text{reclaimed}}$	=	Total volume of reclaimed water used
$\text{Water}_{\text{non-potable}}$	=	Total volume of non-potable water used
0.81	=	Reduction in electric intensity for Southern California

Water sources in CalEEMod include both indoor and outdoor water use. In order to appropriately allocate water emission reductions relative to the use of reclaimed water, these sources were broken out using the detailed breakdown in Appendix A and the reductions were only applied to outdoor water use. It was assumed that reclaimed water would make up at least 80 percent of the outdoor water use. Therefore, the GHG emission reduction is 65 percent. Table E-4 summarizes adjustments due to Project design features.

Table E-4
CORRECTED CALEEMOD OUTPUTS FOR MITIGATED EMISSIONS – WATER
(ANNUAL MT CO_2e)

Source	Percent Reduction	CO_2e	CO_2e Reduced
Water	65%	74	48

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Appendix F

OFF-SITE PIPELINE EMISSION CALCULATION DATA

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Valiano - Sewer Option: Harmony Grove Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust 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 (yd^3/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 Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust 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 ($meters^3$/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.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

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.

Input Type		
Project Name	Valiano - Sewer Option: Harmony Grove	
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	0.28	months
Predominant Soil/Site Type: Enter 1, 2, or 3	2	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	0.97	miles
Total Project Area	0.35	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)

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	2005	%	2006	%	2007	%
Grubbing/Land Clearing		0.03	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation		0.13	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade		0.08	0.00	0.00	0.00	0.00	0.00	0.00
Paving		0.04	0.00	0.00	0.00	0.00	0.00	0.00
Totals	0.00	0.28						

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 contruction 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 overriden 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 Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	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
	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 Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	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
	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 *Program-estimate*		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 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 Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	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

0

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Valiano - Sewer Option: HARRF Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust 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 (yd^3/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 Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust 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 ($meters^3$/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.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

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.

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)

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	2005	%	2006	%	2007	%
Grubbing/Land Clearing		0.02	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation		0.11	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade		0.07	0.00	0.00	0.00	0.00	0.00	0.00
Paving		0.04	0.00	0.00	0.00	0.00	0.00	0.00
Totals	0.00	0.24						

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 contruction 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 overriden 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 Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	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
	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 Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	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
	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 *Program-estimate*		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 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 Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	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	1.1
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

0

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Valiano - Sewer Option: Vallecitos Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust 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 (yd^3/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 Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust 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 ($meters^3$/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.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

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.

Input Type

Project Name	Valiano - Sewer Option: Vallecitos	
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	0.19	months
Predominant Soil/Site Type: Enter 1, 2, or 3	2	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	0.65	miles
Total Project Area	0.24	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)

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	2005	%	2006	%	2007	%
Grubbing/Land Clearing		0.02	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation		0.09	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade		0.06	0.00	0.00	0.00	0.00	0.00	0.00
Paving		0.03	0.00	0.00	0.00	0.00	0.00	0.00
Totals	0.00	0.19						

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 contruction 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 overriden 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 Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	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
	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 Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	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
	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 pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 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 Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	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	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

Appendix G

EFFICIENCY METRIC CALCULATIONS

California Greenhouse Gas Inventory for 1990 — by Sector and Activity (Land Use-driven sectors only)
million metric tons of CO2 equivalent - (based upon IPCC Second Assessment Report's Global Warming Potentials)

	1990
Transportation	
On Road	
Passenger Cars	63.77
Light Duty Trucks	44.75
Motorcycles	0.43
Heavy Duty Trucks	29.03
Freight	0.02
Electricity Generation In-State)	
CHP: Commercial	***0.70***
Merchant Owned	***2.33***
Transmission and Distribution	***1.56***
Utility Owned	***29.92***
Electricity Generation In-State)	
Specified Imports	***29.61***
Transmission and Distribution	***1.02***
Unspecified Imports	***30.96***
Commercial	
CHP: Commercial	***0.40***
Communication	***0.07***
Domestic Utilities	***0.34***
Education	***1.42***
Food Services	***1.89***
Healthcare	***1.32***
Hotels	***0.67***
Not Specified Commercial	***5.58***
Offices	***1.46***
Retail & Wholesale	***0.68***
Transportation Services	***0.03***
Residential	
Household Use	***29.66***
Industrial	
Landfills	***6.26***
Wastewater Treatment	
Domestic Wastewater	2.83
Total Emissions	**286.70**

Service Population Threshold - 2020 and 2021

	2020	2021
Population	40,619,346	40,965,875
Employment	18,511,200	18,609,900
Service Population	59,130,546	59,575,775
Emissions (MMT)	286.70	272.08

MT/SP	4.9	4.6

2021 Emissions based on an annual 5.2% reduction from 2020 (ARB 2015)

Notes:
MMT = million metric tons; MT = metric tons; SP = service population

Source:
California Department of Finance
Demographic Research Unit
Report P-2
State and County Population Projections by Race/Ethnicity and Age (5-year groups)
2010 through 2060 (as of July 1)
Published 12/15/2014
California Department of Finance Employment Development Department
Industry Employment Projections Labor Market Information Division 2010-2020
Published 5/23/2012
Industry Employment Projections Labor Market Information Division 2012-2022
Published 9/19/2014
Employment data for interim years is estimated based on proportionality with population trends based on historical data.
2030 Target Scoping Plan Workshop Slides. (October 1, 2015).
Available: http://www.arb.ca.gov/cc/scopingplan/meetings/10_1_15slides/2015slides.pdf

California Greenhouse Gas Inventory for 1990 — by Sector and Activity

million metric tons of CO2 equivalent - (based upon IPCC Second Assessment Report's Global Warming Potentials)

	1990
Transportation	
On Road	***137.99***
Passenger Cars	63.77
Light Duty Trucks	44.75
Motorcycles	0.43
Heavy Duty Trucks	29.03
Freight	0.02
Ships & Commercial Boats	***2.21***
Aviation (Intrastate)	***5.13***
Rail	***2.33***
Unspecified	***3.01***
Electricity Generation In-State)	
CHP: Commercial	***0.7***
CHP: Industrial	***14.54***
Merchant Owned	***2.33***
Transmission and Distribution	***1.56***
Utility Owned	***29.92***
Electricity Generation In-State)	
Specified Imports	***29.61***
Transmission and Distribution	***1.02***
Unspecified Imports	***30.96***
Commercial	
CHP: Commercial	***0.401***
Communication	0.07
Domestic Utilities	0.339
Education	***1.417***
Food Services	1.893
Healthcare	1.323
Hotels	***0.671***
National Security	***0.564***
Not Specified Commercial	5.577
Offices	1.456
Retail & Wholesale	0.683
Transportation Services	0.034
Residential	
Household Use	***29.657***
Industrial	
CHP: Industrial	***9.7***
Flaring	***0.15***
Landfills	***6.256***
Manufacturing	***31.98***
Mining	***0.03***
Not Specified Industrial	***2.63***
Oil & Gas Extraction	***14.65***
Petroleum Marketing	***0.02***
Petroleum Refining	***32.82***
Pipelines	***1.63***
Wastewater Treatment	
Domestic Wastewater	***2.833***
Industrial Wastewater	0.333
Agriculture & Forestry	
Ag Energy Use	***4.505***
Ag Residue Burning	0.124
Ag Soil Management	6.54
Enteric Fermentation	***6.668***
Forest and Range Management	0.19
Histosol Cultivation	0.181
Manure Management	5
Net CO2 Flux	***-6.69***
Rice Cultivation	0.41
Not Specified	
Not Specified	***1.267***
Total Emissions	

= Included in land use inventory

= Excluded from land use inventory

Appendix H

VALIANO TRAFFIC STUDY – AVERAGE TRIP LENGTH

MEMORANDUM

To:	Paul Tyron Integral Communities	Date:	~~July 28, 2016~~September 14, 2016
From:	John Boarman Cara Hilgesen LLG, Engineers	LLG Ref:	3-12-2152
Subject:	Valiano Traffic Study – Average Trip Length		

LINSCOTT LAW & GREENSPAN engineers

Engineers & Planners
Traffic
Transportation
Parking

Linscott, Law & Greenspan, Engineers
4542 Ruffner Street
Suite 100
San Diego , CA 92111
858.300.8800 T
858.300.8810 F
www.llgengineers.com

Pasadena
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Linscott, Law & Greenspan, Engineers (LLG) has prepared this memorandum for the Valiano Draft EIR. The Project proposes to develop 326 DU on 239 acres. The Project also proposes to develop a maximum of 54 Second Dwelling Units (SDU) which could be attached or detached from the main unit. The description of the Project, trip generation calculations, and traffic analysis provided in EIR utilize the 334 DU plus 54 SDU amount for a total of 388 total units. The average trip length (ATL) in miles per dwelling unit is requested for the environmental Greenhouse Gas Report for compliance with the County's May 2016 recommendations for assessing greenhouse gas emission impacts in the interim period before the revised Climate Action Plan is approved.

The *SANDAG (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002 provides standard ATLs for various land use types. The standard residential trip length is documented at 7.9 miles. This number represents an estimated average of all residential types (single-family, multi-family, etc.) that was computed from several data sources, some of which were in urban areas and some in rural areas ultimately arriving at an industry average for this land use type. However, the underlying source for SANDAG's 7.9 mile trip length is unknown.

The Valiano Project is located within close proximity to an abundant amount of employment opportunities in Escondido and San Marcos, is close to retail shopping areas, and has schools nearby. Because of its proximity to these amenities, a Project-specific analysis was conducted to determine the ATL for the Project site.

In order to arrive at the Project-specific ATL, LLG worked with SANDAG to utilize the SANDAG 2050 Regional Transportation Plan Series 12 Forecast Origin-Destination Model. The baseline model was used assuming existing land use and network conditions (i.e. no Citracado Parkway extension from Andreasen Drive to Harmony Grove Village Parkway). A review of the Project area Traffic Analysis Zone (TAZ) determined the model included residential land uses comparable to the proposed project within the designated site.

Once the model assumptions were validated, a site-specific SANDAG Select Zone Assignment (SZA) model run was conducted for the Project TAZ. The results of ~~model run~~SZA are based on Project access locations, characteristics of the roadway system, and the location of residential, commercial and employment opportunities in

LINSCOTT LAW & GREENSPAN
engineers

the surrounding area. The model run was reviewed for accuracy and the ATL was derived from the data provided. ~~The reviewed model run provided data disaggregated into two categories: 1) *Vehicle Miles Traveled* and 2) *Average Daily Project Traffic Volumes*. These two data categories are used together to calculate ATL.~~

Per the SANDAG SZA for the proposed Project, ~~T~~the ~~total VMT was divided by the Project ADT to arrive at a rate~~ ATL was calculated at~~of~~ **7.05 miles per vehicle trip**.

Using the ATL from the model, the total daily VMT generated by the Project is calculated by multiplying the Project ATL by the Project trip generation. Per the Valiano Traffic Impact Study prepared by our firm dated December 14, 2015, the average daily traffic generated by the Project is **3,786 trips**. This amounts to a total daily VMT of **26,691 miles** (7.05 miles x 3,786 trips).

The data from the model run is included as ***Attachment A*** to this memo.

Please call us if you have any questions. Thank you.

cc: File
Attachments: A. SANDAG Series 12 Traffic Model Select Zone Assignment Data

ATTACHMENT A
SANDAG SERIES 12 TRAFFIC MODEL SELECT ZONE ASSIGNMENT DATA

NM	FXNM	TXNM	Q1	VMT1	PCT1
COUNTRY CLUB	DINARA	LIVE OAK	536	174	59%
zone connector	zone 1086	COUNTRY CLUB	**908**	**160**	**100%**
COUNTRY CLUB	unknown	PROGRESS	524	140	58%
COUNTRY CLUB	EDEN VALLEY	KAUANA LOA	363	99	40%
KAUANA LOA	UNKNOWN	HARMONY GROVE	331	98	36%
COUNTRY CLUB	CITRACADO	unknown	524	78	58%
KAUANA LOA	COUNTRY CLUB	OAK VIEW	331	71	36%
I-15 NB	CENTRE CITY	CITRACADO	61	60	7%
HARMONY GROVE	DRIVEWAY	ENTERPRISE	318	60	35%
COUNTRY CLUB	PROGRESS	DINARA	536	58	59%
I-15 NB	RANCHO BERNARDO	POMERADO	47	57	5%
I-15 SB	WEST BERNARDO	RANCHO BERNARDO	42	54	5%
HARMONY GROVE	CITRACADO	DRIVEWAY	329	54	36%
HARMONY GROVE	HALE	HOWARD	257	48	28%
HARMONY GROVE	WILGEN	zone connector	24	40	3%
I-15 NB	CITRACADO	CITRACADO	61	39	7%
I-15 SB	CITRACADO	CENTRE CITY	51	38	6%
I-15 SB	CITRACADO	CITRACADO	51	36	6%
CITRACADO	FUTURE RAIL STATION	MEYERS	470	36	52%
HALE	09TH	CASA GRANDE MHP	207	35	23%
I-15 NB	CITRACADO	09TH	63	34	7%
SR-78 WB	NORDAHL	WOODLAND	36	33	4%
ELFIN FOREST	UNKNOWN	QUESTHAVEN	24	32	3%
KAUANA LOA	OAK VIEW	UNKNOWN	331	32	36%
I-15 NB	CARMEL MTN	CAM DEL NORTE	38	30	4%
CITRACADO	DON LEE	COUNTRY CLUB	482	30	53%
MISSION	UNKNOWN	SDGE/VALLEY MARKET	87	30	10%
SR-78 EB	WOODLAND	BARHAM	43	29	5%
I-15 SB	CAM DEL NORTE	CARMEL MTN	33	29	4%
MISSION	ENTERPRISE	FRONTIER FENCE	82	28	9%
MISSION	unknown	BARHAM	90	28	10%
09TH	HALE	DRIVEWAY	188	27	21%
I-5 NB	LAS PULGAS	BASILONE	3	27	0%
HARMONY GROVE	HOWARD	PRINCESS KYRA	310	27	34%
SR-78 WB	WOODLAND	TWIN OAKS VALLEY	36	27	4%
I-5 SB	BASILONE	LAS PULGAS	3	26	0%
SR-78 EB	TWIN OAKS VALLEY	WOODLAND	43	26	5%
I-15 NB	POMERADO	POMERADO	47	26	5%
MISSION	SDGE/VALLEY MARKET	ENTERPRISE	87	25	10%
DEL DIOS	RANCHO	UNKNOWN	14	25	2%
RAMP	I-15 NB	09TH	63	24	7%
I-5 NB	VANDEGRIFT	LAS PULGAS	3	24	0%
I-15 SB	GOPHER CANYON	DEER SPRINGS	7	24	1%
SR-78 EB	WOODLAND	WOODLAND	43	23	5%
I-15 NB	SR-163 NB	MIRAMAR WAY	25	23	3%
NORDAHL	RAMP	MISSION	242	23	27%
I-15 NB	DEER SPRINGS	GOPHER CANYON	6	22	1%
SR-78 EB	NORDAHL	I-15 SB	47	22	5%
I-5 SB	LAS PULGAS	VANDEGRIFT	3	21	0%
I-15 NB	POMERADO	VIA RANCHO	49	21	5%
I-15 SB	WEST BERNARDO	WEST BERNARDO	42	21	5%

NM	FXNM	TXNM	Q1	VMT1	PCT1
I-15 SB	RANCHO BERNARDO	RANCHO BERNARDO	40	21	4%
I-15 SB	VIA RANCHO	WEST BERNARDO	45	21	5%
I-15 NB	CAM DEL NORTE	CAM DEL NORTE	38	20	4%
I-15 NB	BERNARDO CENTER	BERNARDO CENTER	41	20	5%
ELFIN FOREST	RANCHO SUMMIT	UNKNOWN	23	20	3%
I-15 NB	SR-56 WB	CARMEL MTN	37	20	4%
HALE	CASA GRANDE MHP	11TH	207	20	23%
COUNTRY CLUB	LIVE OAK	EDEN VALLEY	363	20	40%
I-15 SB	BERNARDO CENTER	CAM DEL NORTE	37	19	4%
SR-78 EB	TWIN OAKS VALLEY	TWIN OAKS VALLEY	43	19	5%
I-15 SB	CARMEL MTN	SR-56 WB	31	19	3%
I-15 SB	MERCY	MIRA MESA	27	19	3%
I-15 SB	09TH	CITRACADO	52	19	6%
HARMONY GROVE	zone connector	unknown	24	19	3%
SR-78 WB	SYCAMORE	MAR VISTA	19	18	2%
SR-78 EB	MAR VISTA	SYCAMORE	19	18	2%
I-15 NB	MIRA MESA	MERCY	32	18	4%
I-15 NB	CARMEL MTN	CARMEL MTN	37	18	4%
09TH	VALLEY	DRIVEWAY	132	17	15%
09TH	DRIVEWAY	DEL DIOS HWY	131	17	14%
SR-78 EB	SAN MARCOS	SAN MARCOS	36	17	4%
I-15 SB	BERNARDO CENTER	BERNARDO CENTER	37	17	4%
I-15 SB	CITRACADO	CENTRE CITY	51	17	6%
I-15 NB	RANCHO BERNARDO	RANCHO BERNARDO	44	16	5%
I-15 SB	RANCHO BERNARDO	BERNARDO CENTER	40	16	4%
I-15 SB	CARMEL MTN	CARMEL MTN	31	16	3%
I-15 NB	MERCY	MERCY	32	16	4%
I-15 SB	MERCY	MERCY	27	16	3%
MISSION	AVENIDA CHAPALA	RANCHEROS	70	16	8%
SR-78 EB	LAS POSAS	SAN MARCOS	36	16	4%
I-15 NB	OLD 395	PALA	6	15	1%
I-15 SB	I-15 HOV SB	SR-56 EB	26	15	3%
I-15 NB	POWAY	I-15 HOV NB	33	15	4%
MISSION	BOUGHER	AVENIDA CHAPALA	49	15	5%
SR-78 WB	I-15 NB	I-15 SB	17	15	2%
I-15 SB	09TH	09TH	23	15	3%
MISSION	BARHAM	UNKNOWN	141	15	15%
SR-78 WB	SAN MARCOS	LAS POSAS	30	15	3%
09TH	AUTOPARK	TANGLEWOOD	131	15	14%
SR-78 EB	BARHAM	NORDAHL	43	14	5%
I-15 SB	MIRAMAR WAY	MIRAMAR WAY	21	14	2%
SR-78 EB	EMERALD	MELROSE	13	14	1%
I-15 NB	MIRAMAR WAY	MIRAMAR WAY	25	14	3%
I-15 NB	RANCHO BERNARDO	POMERADO	47	14	5%
09TH	DRIVEWAY	VALLEY	164	13	18%
SR-78 WB	MELROSE	EMERALD	13	13	1%
I-15 NB	I-15 HOV NB	SR-56 EB	32	13	3%
SR-78 EB	SAN MARCOS	TWIN OAKS VALLEY	43	13	5%
I-15 NB	SR-56 EB	SR-56 WB	32	13	4%
I-15 SB	MIRAMAR WAY	SR-163 SB	21	13	2%
I-15 NB	VIA RANCHO	VIA RANCHO	49	13	5%
I-15 SB	WEST BERNARDO	RANCHO BERNARDO	43	13	5%

NM	FXNM	TXNM	Q1	VMT1	PCT1
I-15 HOV NB	SR-56 EB	CARMEL MTN	5	13	1%
I-15 SB	CAM DEL NORTE	CAM DEL NORTE	33	13	4%
MISSION	SAN MARCOS	GARCIA FOOD MARKET	30	13	3%
I-15 SB	CENTRE CITY	VIA RANCHO	48	13	5%
SR-78 WB	TWIN OAKS VALLEY	TWIN OAKS VALLEY	36	13	4%
CITRACADO	MEYERS	DON LEE	470	13	52%
VALLEY	CLAUDAN	VIA RANCHO	28	12	3%
HOWARD	VIA GRENACHE	HARMONY GROVE	53	12	6%
I-15 SB	PALA	OLD 395	5	12	1%
SR-163 NB	KEARNY VILLA	KEARNY VILLA	14	12	2%
SR-78 EB	RANCHO SANTA FE	RANCHO SANTA FE	26	12	3%
I-15 NB	MIRA MESA	MIRA MESA	29	12	3%
I-15 NB	CARROLL CANYON	CARROLL CANYON	28	12	3%
NORDAHL	RAMP	RAMP	152	12	17%
I-15 SB	VIA RANCHO	VIA RANCHO	45	12	5%
I-15 NB	VIA RANCHO	VIA RANCHO	49	12	5%
COUNTRY CLUB	EL ROCKO	zone connector	27	12	3%
I-15 NB	CAM DEL NORTE	BERNARDO CENTER	42	12	5%
09TH	DEL DIOS HWY	AUTOPARK	131	12	14%
HARMONY GROVE	PRINCESS KYRA	ENTERPRISE	310	12	34%
SR-78 WB	WOODLAND	WOODLAND	36	12	4%
SAN ELIJO RD	MELROSE	UNKNOWN	21	12	2%
RAMP	ramp SR-78 EB	ramp I-15 SB	23	11	3%
I-15 SB	SR-56 WB	I-15 HOV SB	27	11	3%
SR-78 WB	TWIN OAKS VALLEY	SAN MARCOS	36	11	4%
I-15 SB	MIRA MESA	CARROLL CANYON	25	11	3%
COUNTRY CLUB	AVENIDA DEL DIABLO	HARMONY GROVE	25	11	3%
I-15 NB	CAM DEL NORTE	BERNARDO CENTER	41	11	5%
DEL DIOS	zone connector	MT ISRAEL	15	11	2%
I-15 SB	VIA RANCHO	VIA RANCHO	45	11	5%
HARMONY GROVE	KAUANA LOA	CITRACADO	329	11	36%
SR-78 EB	CENTRE CITY	ESCONDIDO	20	11	2%
zone connector	zone 4666	VANDEGRIFT	1	11	0%
SR-78 EB	I-15 NB	I-15 NB	20	10	2%
I-15 NB	BERNARDO CENTER	RANCHO BERNARDO	44	10	5%
SR-163 SB	KEARNY VILLA	SR-52 WB	11	10	1%
I-15 NB	MIRAMAR WAY	POMERADO	26	10	3%
I-15 NB	MERCY	POWAY	32	10	4%
SR-78 EB	SYCAMORE	RANCHO SANTA FE	26	10	3%
I-15 NB	GOPHER CANYON	OLD 395	6	10	1%
I-15 SB	OLD 395	GOPHER CANYON	6	10	1%
I-15 SB	MIRA MESA	MIRA MESA	25	10	3%
I-15 SB	09TH	CITRACADO	52	10	6%
SR-78 EB	RANCHO SANTA FE	LAS POSAS	30	10	3%
DEL DIOS	UNKNOWN	FRUIT STAND	14	10	2%
I-15 NB	POWAY	POWAY	32	10	4%
RAMP	SR-78 EB	NORDAHL	43	9	5%
HALE	11TH	HARMONY GROVE	222	9	24%
I-15 NB	MISSION	RAINBOW VALLEY WEST	3	9	0%
I-15 SB	RAINBOW VALLEY WEST	MISSION	3	9	0%
SR-163 NB	CLAIREMONT MESA	CLAIREMONT MESA	13	9	1%
SR-78 EB	SYCAMORE	SYCAMORE	19	9	2%

NM	FXNM	TXNM	Q1	VMT1	PCT1
I-15 NB	I-15 HOV NB	SR-163 NB	12	9	1%
I-15 SB	SR-163 SB	I-15 HOV SB	10	9	1%
I-15 SB	CARROLL CANYON	CARROLL CANYON	23	9	3%
I-15 NB	POMERADO	POMERADO	26	9	3%
I-15 SB	RANCHO PENASQUITOS	RANCHO PENASQUITOS	28	9	3%
I-15 NB	RANCHO BERNARDO	POMERADO	47	9	5%
SR-78 EB	SYCAMORE	RANCHO SANTA FE	26	9	3%
I-15 NB	PALA	STEWART CANYON	5	9	1%
I-15 NB	CENTRE CITY	DEER SPRINGS	7	9	1%
I-15 SB	DEER SPRINGS	CENTRE CITY	8	9	1%
I-15 SB	RANCHO PENASQUITOS	MERCY	28	9	3%
SR-78 WB	SAN MARCOS	SAN MARCOS	30	9	3%
MISSION	WOODLAND	BOUGHER	49	9	5%
I-15 HOV NB	SR-163 NB	SR-163	3	9	0%
I-15 SB	VALLEY	VALLEY	23	9	3%
HARMONY GROVE	COUNTRY CLUB	WILGEN	24	9	3%
I-15 HOV NB	RANCHO BERNARDO	POMERADO	7	9	1%
HARMONY GROVE	unknown	QUESTHAVEN	24	9	3%
DEL DIOS	ELM	zone connector	16	9	2%
I-15 NB	CENTRE CITY	CITRACADO	53	9	6%
SR-78 WB	RANCHO SANTA FE	SYCAMORE	24	9	3%
HOWARD	AUTOPARK	VIA GRENACHE	43	8	5%
MISSION	UNKNOWN	METCALF	40	8	4%
SR-78 WB	MAR VISTA	SUNSET	18	8	2%
SR-78 EB	SUNSET	MAR VISTA	18	8	2%
SR-78 EB	SUNSET	SUNSET	16	8	2%
I-15 NB	VIA RANCHO	CENTRE CITY	53	8	6%
I-15 SB	CENTRE CITY	EL NORTE	8	8	1%
I-15 NB	EL NORTE	CENTRE CITY	7	8	1%
I-15 NB	MIRA MESA	MIRA MESA	31	8	3%
09TH	RAMP	RAMP	102	8	11%
I-15 NB	CITRACADO	09TH	63	8	7%
SR-78 WB	RANCHO SANTA FE	RANCHO SANTA FE	24	8	3%
SR-78 EB	SYCAMORE	RANCHO SANTA FE	26	8	3%
I-15 HOV NB	CAM DEL NORTE	RANCHO BERNARDO	7	8	1%
I-15 HOV SB	RANCHO BERNARDO	CAM DEL NORTE	4	8	0%
DEL DIOS	UNKNOWN	UNKNOWN	14	8	2%
DEL DIOS	LUNA DE MIEL	DEL DIOS ROUNDABOUT	13	8	1%
SR-78 WB	SYCAMORE	SYCAMORE	19	8	2%
SAN ELIJO RD	RANCHO SANTA FE	MELROSE	20	8	2%
VALLEY CENTER	unknown	unknown	6	8	1%
SR-78 NEW	OLD SAN PASQUAL	SAN PASQUAL VALLEY	11	7	1%
SR-163 SB	I-15 SB	I-15 HOV SB	11	7	1%
SR-78 EB	MAR VISTA	MAR VISTA	18	7	2%
SR-163 NB	I-15 HOV NB	I-15 NB	13	7	1%
SR-163 NB	KEARNY VILLA	KEARNY VILLA	14	7	2%
SR-78 WB	I-15 SB	NORDAHL	25	7	3%
I-15 SB	SR-56 EB	RANCHO PENASQUITOS	29	7	3%
I-15 NB	RANCHO BERNARDO	RANCHO BERNARDO	46	7	5%
SR-78 WB	RANCHO SANTA FE	SYCAMORE	24	7	3%
I-15 SB	STEWART CANYON	PALA	4	7	0%
SR-78 WB	SAN MARCOS	SAN MARCOS	30	7	3%

NM	FXNM	TXNM	Q1	VMT1	PCT1
I-15 NB	MIRA MESA	MERCY	32	7	4%
I-15 SB	SR-52 WB	SR-52 EB	8	7	1%
RAMP	SR-78 WB	NORDAHL	25	7	3%
NORDAHL	MONTIEL	RAMP	91	7	10%
I-15 HOV SB	VIA RANCHO	VIA RANCHO	6	7	1%
CITRACADO	MISSION	FUTURE RAIL STATION	470	7	52%
SR-78 WB	LAS POSAS	RANCHO SANTA FE	24	7	3%
I-15 NB	SR-56 EB	SR-56 WB	36	7	4%
I-15 HOV SB	VIA RANCHO	VIA RANCHO	6	7	1%
SR-78 WB	SUNSET	SUNSET	15	7	2%
VIA RANCHO	VIA LOMA VISTA	FELICITA	9	7	1%
HALE	GREEN TREE	AVNDA DEL DIABLO	30	7	3%
COUNTRY CLUB	MT WHITNEY	EL ROCKO	27	7	3%
SAN PASQUAL VALLEY	unknown	OAKWOOD GROVE	7	7	1%
SR-78	SAN PASQUAL VALLEY	HORIZON VIEW	7	7	1%
zone connector	zone 978	NORDAHL	43	7	5%
SAN PASQUAL VALLEY	WD ANIMAL PK BUS ACC	OLD MILKY WY	6	6	1%
RAMP	ramp I-15 SB	I-15 SB	29	6	3%
RAMP	ramp SR-78 WB	ramp SR-78 WB	36	6	4%
SR-163 NB	BALBOA	BALBOA	10	6	1%
SR-163 SB	CLAIREMONT MESA	CLAIREMONT MESA	8	6	1%
SR-78 WB	EMERALD	VISTA WY	11	6	1%
SR-78 WB	RANCHO DEL ORO	EL CAMINO REAL	10	6	1%
SR-78 WB	EMERALD	EMERALD	11	6	1%
SR-78 EB	MELROSE	MELROSE	13	6	1%
SR-78 WB	MAR VISTA	MAR VISTA	18	6	2%
I-15 NB	SR-52 WB	I-15 HOV NB	13	6	1%
I-15 SB	I-15 HOV SB	SR-52 WB	11	6	1%
I-15 SB	MIRAMAR	MIRAMAR	21	6	2%
I-15 NB	POMERADO	POMERADO	27	6	3%
I-15 SB	MIRA MESA	MIRA MESA	25	6	3%
I-15 NB	POMERADO	CARROLL CANYON	28	6	3%
I-15 SB	RANCHO PENASQUITOS	RANCHO PENASQUITOS	28	6	3%
I-15 NB	FRIARS	STONECREST	6	6	1%
I-15 NB	STEWART CANYON	MISSION	5	6	1%
I-15 SB	EL NORTE	EL NORTE	8	6	1%
AVNDA DEL DIABLO	CITRACADO	HALE	26	6	3%
I-15 NB	SR-52 EB	SR-52 WB	8	6	1%
PASEO DELICIAS	DEL DIOS ROUNDABOUT2	LA VALLE PLATEADA	11	6	1%
DEL DIOS	RANCHO DEL RIO	LUNA DE MIEL	14	6	2%
I-15 NB	POWAY	POWAY	33	6	4%
RANCHO SANTA FE	CALLE JUNPERO	AVENIDA SOLEDAD	10	6	1%
VINEYARD	CITRACADO	ENTERPRISE	29	6	3%
CITRACADO	1751 MHP	JOHNSTON	24	6	3%
MISSION	MISSION HILLS	DRIVEWAY	39	6	4%
W LA MOREE	E BARHAM	VIA DEL CAMPO	9	6	1%
SR-78	INDIAN OAKS	WEEKEND VILLA	7	6	1%
MISSION	UNKNOWN	MULBERRY	32	5	3%
RAMP	ramp SR-78 EB	ramp SR-78 EB	47	5	5%
RAMP	ramp I-15 SB	ramp I-15 SB	29	5	3%
WASHINGTON	UNKNOWN	UNKNOWN	42	5	5%
SR-78 WB	COLLEGE	RANCHO DEL ORO	10	5	1%

NM	FXNM	TXNM	Q1	VMT1	PCT1
SR-78 EB	RANCHO DEL ORO	COLLEGE	10	5	1%
SR-78 EB	I-15 SB	I-15 NB	24	5	3%
SR-78 EB	EMERALD	EMERALD	11	5	1%
SR-78 EB	EL CAMINO REAL	RANCHO DEL ORO	10	5	1%
I-15 SB	MIRAMAR	MIRAMAR	21	5	2%
I-15 NB	CARROLL CANYON	MIRA MESA	29	5	3%
I-15 NB	CARROLL CANYON	MIRA MESA	29	5	3%
I-15 SB	MISSION	STEWART CANYON	4	5	0%
I-15 SB	DEER SPRINGS	DEER SPRINGS	7	5	1%
I-15 SB	OLD 395	OLD 395	5	5	1%
SR-163 NB	I-805 NB	I-805 NB	9	5	1%
MISSION	BENNETT	unknown	90	5	10%
09TH	TANGLEWOOD	RAMP	131	5	14%
SR-163 NB	FRIARS	GENESEE	8	5	1%
SR-78 WB	TWIN OAKS VALLEY	TWIN OAKS VALLEY	36	5	4%
I-15 HOV NB	CAM DEL NORTE	RANCHO BERNARDO	7	5	1%
SR-78 WB	RANCHO SANTA FE	SYCAMORE	24	5	3%
PASEO DELICIAS	DEL DIOS ROUNDABOUT	DEL DIOS ROUNDABOUT2	12	5	1%
VIA DE LA VALLE	CANCHA DE GOLF	CAMTO PORTA DELGADA	6	5	1%
I-15 HOV SB	RANCHO BERNARDO	CAM DEL NORTE	4	5	0%
I-15 HOV NB	MIRA MESA	RANCHO PENASQUITOS	3	5	0%
ELFIN FOREST	unknown	unknown	23	5	3%
CITRACADO	DON LEE	VINEYARD	36	5	4%
SR-78 WB	SUNSET	MELROSE	15	5	2%
09TH	S UPAS	TULIP	37	5	4%
SAN PASQUAL VALLEY	SUMMIT	TEEPEE	11	5	1%
SAN PASQUAL VALLEY	17TH	BEAR VALLEY	11	5	1%
MISSION	DRIVER	RICHLAND	41	5	4%
SAN PASQUAL VALLEY	ORANGE GROVE	zone connector	7	5	1%
CAM DEL NORTE	RAMP	CARMEL MTN	7	5	1%
zone connector	zone 126	VANDEGRIFT	3	5	0%
MISSION	MULBERRY	ROCK SPRINGS	39	4	4%
BARHAM	TWIN OAKS VALLEY	CAMPUS WAY	15	4	2%
WASHINGTON	UNKNOWN	HALE	42	4	5%
WASHINGTON	DRIVEWAY	QUINCE	24	4	3%
SR-78	SAN FELIPE	YAQUI PASS	1	4	0%
MISSION	DRIVEWAY	ROCK SPRINGS	30	4	3%
MISSION	METCALF	DRIVEWAY	31	4	3%
RAMP	ramp SR-78 WB	SR-78 WB	36	4	4%
MISSION	FRONTIER FENCE	ANDREASON	82	4	9%
VALLEY	THE VIEWS MHP	CLAUDAN	29	4	3%
SAN PASQUAL VALLEY	ZOO	WD ANIMAL PK BUS ACC	9	4	1%
SAN PASQUAL VALLEY	ramp SR-125 NB	ZOO	9	4	1%
RAMP	ramp I-15 SB	I-15 SB	23	4	3%
SR-163 SB	BALBOA	BALBOA	7	4	1%
SR-78 EB	PLAZA	EMERALD	11	4	1%
SR-163 SB	SR-52 WB	SR-52 WB	9	4	1%
SR-163 SB	KEARNY VILLA	KEARNY VILLA	11	4	1%
SR-78 EB	EL CAMINO REAL	EL CAMINO REAL	8	4	1%
SR-78 WB	JEFFERSON	JEFFERSON	7	4	1%
SR-78 EB	JEFFERSON	JEFFERSON	7	4	1%
SR-78 WB	EL CAMINO REAL	EL CAMINO REAL	8	4	1%

NM	FXNM	TXNM	Q1	VMT1	PCT1
I-15 SB	MIRAMAR	MIRAMAR WAY	21	4	2%
I-15 SB	MIRAMAR	MIRAMAR WAY	21	4	2%
SR-56 EB	CAMINO SANTA FE	CAMINO RUIZ	4	4	0%
SR-56 EB	RANCHO PENASQUITOS	I-15 SB	5	4	1%
I-15 NB	DEER SPRINGS	DEER SPRINGS	6	4	1%
I-15 NB	GOPHER CANYON	GOPHER CANYON	6	4	1%
I-15 SB	GOPHER CANYON	GOPHER CANYON	6	4	1%
I-15 SB	EL NORTE	SR-78 WB	8	4	1%
I-15 SB	DEER SPRINGS	CENTRE CITY	8	4	1%
SR-78 WB	MELROSE	MELROSE	13	4	1%
LA MOREE	PUEBLO	CAMTO A CASA	10	4	1%
NORDAHL	ROCK SPRINGS	KNOB HILL	11	4	1%
I-5 SB	OCEANSIDE	CASSIDY	6	4	1%
CITRACADO	COUNTRY CLUB	VINEYARD	38	4	4%
I-15 SB	STONECREST	STONECREST	7	4	1%
I-15 SB	AERO	AERO	7	4	1%
I-15 SB	VALLEY	09TH	23	4	3%
PALOMAR AIRPORT	EL CAMINO REAL	INNOVATION	9	4	1%
SR-163 SB	GENESEE	FRIARS	7	4	1%
SR-163 SB	GENESEE	FRIARS	7	4	1%
SR-78 WB	RANCHO SANTA FE	RANCHO SANTA FE	24	4	3%
I-5 NB	CASSIDY	CALIFORNIA	6	4	1%
CITRACADO	AVNDA DEL DIABLO	1751 MHP	26	4	3%
DEL DIOS	VIA RANCHO	unknown	16	4	2%
VIA DE LA VALLE	DEL DIOS ROUNDABOUT1	VIA DE SANTA FE	7	4	1%
CITRACADO	VINEYARD	AERO WAY	36	4	4%
MISSION	ANDREASON	WASHINGTON	82	4	9%
WASHINGTON	MISSION	HOWARD	42	4	5%
RANCHO SANTA FE	LA COSTA	CALLE CONIFERA	10	4	1%
RANCHO SANTA FE	CALLE CONIFERA	CALLE JUNPERO	10	4	1%
MELROSE	ALGA	CORINTIA	10	4	1%
SR-78 WB	MELROSE	MELROSE	13	4	1%
SR-78 WB	ESCONDIDO	CENTRE CITY	16	4	2%
TULIP	HALE	RAILROAD	18	4	2%
VIA RANCHO	EUCALYPTUS	TAN TAM	10	4	1%
VIA RANCHO	QUAIL GLEN	EUCALYPTUS	12	4	1%
HALE	NAVAJO	GREEN TREE	35	4	4%
BARHAM	MEYERS	OPPER	25	4	3%
MISSION	BARHAM	BARHAM	141	4	15%
MISSION	ROCK SPRINGS	MISSION HILLS	39	4	4%
MISSION	DRIVEWAY	DRIVER	41	4	4%
BARHAM	unknown	W LA MOREE	18	4	2%
BARHAM	WOODLAND	LA MOREE	13	4	1%
SAN ELIJO RD	UNKNOWN	DRIVEWAY	21	4	2%
LAKE WOHLFORD	OAKVALE	VALLEY CENTER	2	4	0%
SAN PASQUAL VALLEY	UNNAMED 12D	ORANGE GROVE	7	4	1%
SAN PASQUAL VALLEY	zone connector	SR-78	7	4	1%
SAN PASQUAL VALLEY	SR-78	ORASCO GUEJITO	7	4	1%
WILDCAT CANYON	LITTLE KLONDIKE	SAN VICENTE OAKS	2	4	0%
WILDCAT CANYON	SAN VICENTE OAKS	FEATHERSTONE CANYON	2	4	0%
DEL DIOS	CALLE AMBIENTE	BING CROSBY	14	4	2%
zone connector	zone 941	MISSION	19	4	2%

NM	FXNM	TXNM	Q1	VMT1	PCT1
MISSION	RICHLAND	WOODLAND	41	3	4%
VALLEY	AUTOPARK	zone connector	32	3	4%
VALLEY	zone connector	09TH	32	3	4%
LINCOLN	ASH	MARTIN	13	3	1%
LINCOLN	BROADWAY	UNKNOWN	36	3	4%
LINCOLN	GARRICK	BROADWAY	16	3	2%
PALOMAR AIRPORT	UNKNOWN	BUSINESS PARK	6	3	1%
WASHINGTON	DRIVEWAY	ROCK SPRINGS	25	3	3%
SR-78	WYNOLA	UNKNOWN	1	3	0%
RAMP	SR-78 WB	I-5 NB	6	3	1%
RAMP	ramp SR-78 EB	SR-78 EB	47	3	5%
RAMP	ramp I-15 SB	RAMP	8	3	1%
RANCHEROS	WOODLAND	zone connector	11	3	1%
ELFIN FOREST	unknown	RANCHO SUMMIT	23	3	3%
RAMP	SR-78 EB	ramp SR-78 EB	23	3	3%
SAN PASQUAL VALLEY	VIA RANCHO	ramp SR-125 SB	9	3	1%
SR-163 NB	GENESEE	GENESEE	8	3	1%
SR-163 NB	BALBOA	CLAIREMONT MESA	13	3	1%
SR-163 NB	I-805 NB	BALBOA	10	3	1%
SR-78 EB	COLLEGE	PLAZA	10	3	1%
SR-163 NB	KEARNY VILLA	I-15 HOV NB	15	3	2%
SR-78 WB	VISTA WY	COLLEGE	10	3	1%
SR-78 EB	I-15 NB	CENTRE CITY	20	3	2%
SR-163 NB	SR-52 EB	KEARNY VILLA	14	3	2%
SR-163 SB	BALBOA	I-805 SB	7	3	1%
SR-163 NB	FRIARS	FRIARS	8	3	1%
I-5 NB	MISSION	MISSION	5	3	1%
SR-78 EB	MELROSE	SUNSET	16	3	2%
I-15 NB	BALBOA	CLAIREMONT MESA	8	3	1%
I-15 NB	STONECREST	AERO	6	3	1%
I-5 NB AUXILLARY	LRT-MIDCOAST		4	3	0%
I-15 SB	CARROLL CANYON	MIRAMAR	23	3	3%
SR-56 WB	I-15 SB	RANCHO PENASQUITOS	5	3	1%
SR-56 WB	CAMINO RUIZ	CAMINO SANTA FE	3	3	0%
SR-56 WB	CAMINO RUIZ	CAMINO SANTA FE	3	3	0%
SR-56 EB	CAMINO SANTA FE	CAMINO RUIZ	4	3	0%
I-15 NB	EL NORTE	EL NORTE	4	3	0%
I-15 NB	SR-78 WB	EL NORTE	4	3	0%
I-15 NB	CENTRE CITY	DEER SPRINGS	7	3	1%
SAN PASQUAL VALLEY	YSABEL CREEK	unknown	7	3	1%
SAN PASQUAL VALLEY	unknown	unknown	7	3	1%
I-15 SB	CLAIREMONT MESA	CLAIREMONT MESA	8	3	1%
SR-78 WB	VISTA WY	VISTA WY	10	3	1%
SR-78 EB	PLAZA	PLAZA	10	3	1%
SR-78 WB	CENTRE CITY	I-15 NB	17	3	2%
SR-78 WB	CENTRE CITY	CENTRE CITY	16	3	2%
SR-163 SB	I-805 SB	I-805 SB	7	3	1%
09TH	RAMP	LA TERRAZA	39	3	4%
I-15 NB	FRIARS	FRIARS	6	3	1%
SR-163 SB	ROBINSON	RICHMOND	3	3	0%
SR-56 EB	CAMINO SANTA FE	CAMINO SANTA FE	4	3	0%
I-15 SB	CARROLL CANYON	MIRAMAR	23	3	3%

NM	FXNM	TXNM	Q1	VMT1	PCT1
SR-78 WB	LAS POSAS	LAS POSAS	26	3	3%
09TH	UNKNOWN	PINECREST	39	3	4%
I-15 SB	MURPHY CANYON	FRIARS	7	3	1%
I-15 SB	BALBOA	AERO	7	3	1%
I-15 SB	SR-78 EB	VALLEY	23	3	3%
PALOMAR AIRPORT	INNOVATION	UNKNOWN	9	3	1%
SR-52 WB	MAST	SANTO	2	3	0%
SR-163 NB	FRIARS	GENESEE	8	3	1%
SR-78 EB	LAS POSAS	SAN MARCOS	30	3	3%
RANCHO SANTA FE	CM DE LOS COCHES	CALLE BARCELONA	8	3	1%
SR-163 SB	I-805 SB	MESA COLLEGE	7	3	1%
SR-78 WB	RANCHO SANTA FE	SYCAMORE	24	3	3%
MISSION	GARCIA FOOD MARKET	UNKNOWN	30	3	3%
VIA RANCHO	PURER	VIA LOMA VISTA	10	3	1%
DEL DIOS	DEL DIOS HIGHLANDS	ELM	16	3	2%
VIA DE LA VALLE	VIA DE SANTA FE	LA GRACIA	7	3	1%
VIA DE LA VALLE	LA GRACIA	CALZADA DEL BOSQUE	7	3	1%
VIA DE LA VALLE	CALZADA DEL BOSQUE	EL APAJO	6	3	1%
VIA DE LA VALLE	EL APAJO	LAS PALOMAS	6	3	1%
I-15 HOV NB	SR-56 EB	CARMEL MTN	5	3	1%
I-15 HOV SB	VIA RANCHO	POMERADO	5	3	1%
SR-56 EB	CAMINO RUIZ	BLACK MOUNTAIN	4	3	0%
SR-56 WB	BLACK MOUNTAIN	CAMINO RUIZ	4	3	0%
SR-56 EB	BLACK MOUNTAIN	BLACK MOUNTAIN	4	3	0%
EL CAMINO REAL	SAN DIEGUITO	unknown	5	3	1%
MISSION	MARCOS	PICO	10	3	1%
PALOMAR AIRPORT	EL FUERTE	LOKER	10	3	1%
RANCHO SANTA FE	AVENIDA SOLEDAD	SAN ELIJO RD	10	3	1%
MISSION	DRIVEWAY	QUINCE	19	3	2%
VALLEY	LAKE WOHLFORD	BEVEN	8	3	1%
09TH	PINECREST	S UPAS	37	3	4%
VIA RANCHO	QUIET HILLS	LOMAS SERENAS	8	3	1%
CITRACADO	JOHNSTON	VALLEY	24	3	3%
11TH	PASADERO	VALLEY	15	3	2%
AUTOPARK	DRIVEWAY	VALLEY	18	3	2%
VINEYARD	ENTERPRISE	VENTURE	29	3	3%
BARHAM	BENNETT	MEYERS	25	3	3%
RANCHEROS	DRIVEWAY	SANTAR	8	3	1%
RANCHEROS	SANTAR	RAMP	11	3	1%
BARHAM	W LA MOREE	CARMEL	12	3	1%
BARHAM	LA MOREE	UNKNOWN	23	3	3%
LA MOREE	BARHAM	PUEBLO	10	3	1%
RANCHEROS	DRIVEWAY	UNKNOWN	11	3	1%
CRAVEN	DISCOVERY	FOXHALL	6	3	1%
SAN MARCOS	ACACIA	VIEWPOINT	6	3	1%
SAN MARCOS	BUSINESS PARK	UNKNOWN	6	3	1%
SAN ELIJO RD	DRIVEWAY	QUESTHAVEN	21	3	2%
LAKE WOHLFORD	GUEJITO	WOHLFORD	2	3	0%
SAN PASQUAL VALLEY	BANDY CANYON	SAN PASQUAL ACADEMY	7	3	1%
SR-78	WEEKEND VILLA	CROSSWINDS	7	3	1%
WILDCAT CANYON	FEATHERSTONE CANYON	zone connector	2	3	0%
DEL DIOS	FRUIT STAND	CALLE AMBIENTE	14	3	2%

NM	FXNM	TXNM	Q1	VMT1	PCT1
zone connector	zone 992	BARHAM	26	3	3%
zone connector	zone 1216	09TH	23	3	3%
VALLEY	RAMP	RAMP	12	2	1%
BARHAM	DRIVEWAY	RAMP	13	2	1%
BARHAM	CARMEL	DRIVEWAY	13	2	1%
VIA RANCHO	FRONTAGE	RAMP	8	2	1%
LINCOLN	MARTIN	FIG	14	2	2%
LINCOLN	GAMBLE	GARRICK	16	2	2%
PALOMAR AIRPORT	COLLEGE	UNKNOWN	4	2	0%
MONTIEL	LEORA	DEODAR	9	2	1%
DE LUZ	DE LUZ MURRIETA	HARRIS	0	2	0%
17TH	ENCINO	LENDEE	10	2	1%
HIGHLAND VALLEY	UNKNOWN	UNKNOWN	1	2	0%
SAN VICENTE	unknown	CHUCKWAGON	2	2	0%
EL CAMINO REAL	HALF MILE	QUARTER MILE	4	2	0%
MISSION	ROCK SPRINGS	DAN	28	2	3%
SAN PASQUAL VALLEY	SR-78 NEW	zone connector	11	2	1%
I-8 WB	PINE VALLEY	JAPATUL VALLEY	0	2	0%
RAMP	ramp	RAMP	3	2	0%
SR-67	unknown	SLAUGHTERHOUSE CNYN	1	2	0%
HALE	HARMONY GROVE	NAVAJO	35	2	4%
NORDAHL	EL NORTE	zone connector	11	2	1%
DISCOVERY	APPLEWILDE	VIA VERA CRUZ	6	2	1%
VIA RANCHO	LAKE	HIGHLANDS W	12	2	1%
I-15 SR56 RAMP	ramp I-15 SB	SR-56 WB	5	2	1%
BEAR VALLEY	SAN PASQUAL	NORTH COUNTY FAIR	5	2	1%
VIA RANCHO	LOMAS SERENAS	FRONTAGE	8	2	1%
VINEYARD	VENTURE	MARKET	13	2	1%
MISSION	BROADWAY	N JUNIPER	15	2	2%
RAMP	I-805 NB	I-15 NB	2	2	0%
RAMP	ramp SR-78 EB	I-15 NB	4	2	0%
WASHINGTON	HOWARD	UNKNOWN	42	2	5%
SR-78 WB	RANCHO DEL ORO	RANCHO DEL ORO	10	2	1%
SR-163 SB	CLAIREMONT MESA	BALBOA	8	2	1%
I-5 SB	MISSION	OCEANSIDE	5	2	1%
I-5 NB	CALIFORNIA	OCEANSIDE	6	2	1%
SR-78 EB	RANCHO DEL ORO	RANCHO DEL ORO	10	2	1%
SR-163 NB	CLAIREMONT MESA	SR-52 EB	14	2	2%
SR-163 SB	GENESEE	GENESEE	7	2	1%
SR-163 NB	06TH EX	I-8 EB	4	2	0%
SR-163 NB	RICHMOND	ROBINSON	4	2	0%
SR-78 EB	VISTA WY	I-5 NB	6	2	1%
I-5 SB	MISSION	MISSION	5	2	1%
I-5 SB	SR-76	SR-76	4	2	0%
SR-52 EB	I-805 NB	CONVOY	3	2	0%
I-15 NB	AERO	BALBOA	7	2	1%
I-15 SB	CLAIREMONT MESA	BALBOA	8	2	1%
I-15 NB	BALBOA	BALBOA	7	2	1%
I-5 NB AUXILLARY		LRT-MIDCOAST	3	2	0%
I-5 SB AUXILLARY		CARMEL MOUNTAIN	3	2	0%
I-5 NB	BASILONE	BASILONE	3	2	0%
I-5 SB	LAS PULGAS	LAS PULGAS	3	2	0%

NM	FXNM	TXNM	Q1	VMT1	PCT1
I-5 NB	LAS PULGAS	LAS PULGAS	3	2	0%
I-15 SB	MISSION	MISSION	3	2	0%
I-15 NB	MISSION	MISSION	3	2	0%
I-15 SB	RAINBOW VALLEY WEST	RAINBOW VALLEY WEST	3	2	0%
I-15 NB	RAINBOW VALLEY WEST	RAINBOW VALLEY WEST	3	2	0%
SR-56 WB	CARMEL COUNTRY	CARMEL CREEK	3	2	0%
SR-56 EB	CARMEL CREEK	CARMEL COUNTRY	4	2	0%
SR-56 EB	CAMINO SANTA FE	CAMINO RUIZ	4	2	0%
SR-56 EB	CARMEL COUNTRY	CARMEL COUNTRY	4	2	0%
SR-56 WB	CAMINO RUIZ	CAMINO SANTA FE	3	2	0%
I-15 NB	OLD 395	OLD 395	6	2	1%
I-15 NB	OLD 395	OLD 395	6	2	1%
I-15 NB	CENTRE CITY	DEER SPRINGS	7	2	1%
I-15 SB	DEER SPRINGS	CENTRE CITY	8	2	1%
I-15 SB	I-15 HOV SB	SR-56 EB	26	2	3%
I-15 SB	I-8 EB	ADAMS	4	2	0%
SR-76	UNKNOWN	EAST GRADE	0	2	0%
SR-78	HAVERFORD	unknown	5	2	1%
I-5 SB	RAMP	CASSIDY	6	2	1%
I-15 HOV NB	MIRA MESA	RANCHO PENASQUITOS	3	2	0%
SR-56 WB	SR-56 HOV WB	I-5 SB AUXILLARY	3	2	0%
SR-78 EB	MELROSE	MELROSE	13	2	1%
SR-78 EB	MELROSE	MELROSE	13	2	1%
SAN MARCOS	GRAND	RAMP	14	2	2%
BARHAM	UNKNOWN	RAMP	23	2	3%
VALLEY	AVNDA DEL DIABLO	VERMEL	5	2	1%
I-15 HOV NB	MIRA MESA	RANCHO PENASQUITOS	3	2	0%
I-15 HOV SB	I-15 SB	RANCHO PENASQUITOS	1	2	0%
SR-94 EB	FEDERAL	COLLEGE GROVE	1	2	0%
I-15 HOV SB	MIRAMAR	MIRAMAR WAY	1	2	0%
ELFIN FOREST	SAN ELIJO RD	ELFIN FOREST	11	2	1%
SR-52 EB	SANTO	MAST	1	2	0%
SR-56 WB	CAMINO SANTA FE	CAMINO SANTA FE	3	2	0%
SR-56 EB	CARMEL COUNTRY	CAMINO SANTA FE	4	2	0%
SR-78 EB	LAS POSAS	LAS POSAS	30	2	3%
SR-78 WB	LAS POSAS	LAS POSAS	26	2	3%
SR-78 EB	LAS POSAS	LAS POSAS	30	2	3%
SR-78 EB	LAS POSAS	LAS POSAS	30	2	3%
CAM DEL NORTE	WORLD TRADE	POMERADO	5	2	1%
POWAY	BLUE CRYSTAL	ramp SR-125 SB	1	2	0%
VALLEY	CITRACADO	THE VIEWS MHP	29	2	3%
09TH	S SPRUCE	REDWOOD	26	2	3%
09TH	LA TERRAZA	UNKNOWN	39	2	4%
09TH	TULIP	S SPRUCE	26	2	3%
WASHINGTON	CITRUS	unknown	9	2	1%
ELFIN FOREST	unknown	SAN ELIJO RD	12	2	1%
I-15 NB	SR-52 EB	SR-52 WB	8	2	1%
I-15 NB	CLAIREMONT MESA	CLAIREMONT MESA	8	2	1%
I-15 SB	FRIARS	FRIARS	6	2	1%
I-15 HOV SB	VIA RANCHO	VIA RANCHO	6	2	1%
SR-52 EB	I-805 SB	I-805 SB	2	2	0%
SR-52 WB	MAST	SANTO	2	2	0%

NM	FXNM	TXNM	Q1	VMT1	PCT1
SR-52 WB	MAST	SANTO	2	2	0%
I-15 SB	BALBOA	BALBOA	7	2	1%
MISSION	UNKNOWN	CITRACADO	141	2	15%
SR-78 WB	SAN MARCOS	LAS POSAS	26	2	3%
RANCHO SANTA FE	LA COSTA	unknown	8	2	1%
RANCHO SANTA FE	unknown	CM DE LOS COCHES	8	2	1%
SR-56 EB	I-5 NB AUXILLARY	RAMP	4	2	0%
CAM DEL NORTE	CARMEL MTN	WORLD TRADE	5	2	1%
VALLEY CENTER	unknown	unknown	6	2	1%
COUNTRY CLUB	zone connector	AVENIDA DEL DIABLO	25	2	3%
YAQUI PASS	RAMS HILL	zone connector	0	2	0%
BARHAM	CAMPUS WAY	unknown	18	2	2%
SR-163 SB	I-15 HOV SB	KEARNY VILLA	11	2	1%
SR-78 WB	JEFFERSON	I-5 NB	7	2	1%
SR-78 EB	I-5 NB	JEFFERSON	7	2	1%
SR-163 NB	MESA COLLEGE	I-805 NB	9	2	1%
SR-163 NB	MESA COLLEGE	I-805 NB	9	2	1%
SR-163 SB	I-805 SB	MESA COLLEGE	7	2	1%
BARHAM	RAMP	SHELLY	13	2	1%
I-15 HOV NB	RANCHO BERNARDO	POMERADO	7	2	1%
I-5 NB	SORRENTO VALLEY	I-805 NB	3	2	0%
I-15 HOV NB	CAM DEL NORTE	RANCHO BERNARDO	7	2	1%
SR-78 WB	MELROSE	MELROSE	13	2	1%
DEL DIOS	unknown	COUNTRY CLUB	16	2	2%
DEL DIOS	COUNTRY CLUB	DEL DIOS HIGHLANDS	16	2	2%
LINEA DEL CIELO	CALZADA DEL BOSQUE	LAS PLANIDERAS	3	2	0%
SR-163 SB	MESA COLLEGE	GENESEE	7	2	1%
SR-163 NB	GENESEE	MESA COLLEGE	9	2	1%
I-15 HOV NB	VIA RANCHO	VIA RANCHO	7	2	1%
I-15 HOV NB	CAM DEL NORTE	RANCHO BERNARDO	5	2	1%
RANCHO SANTA FE	LA COSTA MEADOWS	QUESTHAVEN	9	2	1%
CITRACADO	AERO WAY	DON LEE	36	2	4%
MISSION	WASHINGTON	UNKNOWN	40	2	4%
JULIAN	SR-79	SR-78	1	2	0%
SR-56 EB	BLACK MOUNTAIN	RANCHO PENASQUITOS	5	2	1%
SR-56 WB	RANCHO PENASQUITOS	RANCHO PENASQUITOS	4	2	0%
SR-56 EB	RANCHO PENASQUITOS	RANCHO PENASQUITOS	5	2	1%
SR-56 WB	RANCHO PENASQUITOS	BLACK MOUNTAIN	4	2	0%
SR-56 WB	BLACK MOUNTAIN	BLACK MOUNTAIN	4	2	0%
EL CAMINO REAL	VIA DE LA VALLE	SAN DIEGUITO	5	2	1%
SR-125 NB	GROSSMONT COLLEGE DR	SR-52 EB	2	2	0%
MISSION	KNOLL	MARCOS	10	2	1%
I-15 SB	PALA	PALA	4	2	0%
I-15 NB	PALA	PALA	5	2	1%
I-15 NB	PALA	PALA	5	2	1%
PALOMAR AIRPORT	LOKER	MELROSE	11	2	1%
PALOMAR AIRPORT	MELROSE	UNKNOWN	6	2	1%
MELROSE	CARILLO	VIA PATRON	5	2	1%
ALGA	CANDELERO	CORINTIA	2	2	0%
RANCHO SANTA FE	CALLE BARCELONA	OLIVENHAIN	7	2	1%
LEUCADIA	QUAIL GARDENS	GARDEN VIEW	3	2	0%
PALOMAR AIRPORT	PALOMAR OAKS	CAM VIDA ROBLE	4	2	0%

NM	FXNM	TXNM	Q1	VMT1	PCT1
PALOMAR AIRPORT	CAM VIDA ROBLE	UNKNOWN	5	2	1%
09TH	REDWOOD	QUINCE	25	2	3%
SAN ELIJO RD	zone connector	COOKE ST	11	2	1%
SAN ELIJO RD	COOKE ST	SAN ELIJO RD	11	2	1%
SYCAMORE	LA MIRADA	BUSINESS PARK	4	2	0%
NORDAHL	zone connector	ANTHONY HEIGHTS	11	2	1%
NORDAHL	ANTHONY HEIGHTS	ROCK SPRINGS	11	2	1%
CENTRE CITY NB	ramp	CENTRE CITY SB	7	2	1%
MONTIEL	VIA TERAMO	ROCK SPRINGS	4	2	0%
LINCOLN	UNKNOWN	SR-78 WB	36	2	4%
LINCOLN	DRIVEWAY	GAMBLE	15	2	2%
MISSION	FIG	DRIVEWAY	10	2	1%
VALLEY	BEVEN	EUREKA	8	2	1%
TULIP	RAILROAD	DRIVEWAY	17	2	2%
SAN PASQUAL VALLEY	SORRENTINO	SUMMIT	11	2	1%
17TH	LENDEE	SAN PASQUAL VALLEY	10	2	1%
VIA RANCHO	MONTESANO	QUIET HILLS	9	2	1%
VIA RANCHO	HIGHLANDS W	QUAIL GLEN	12	2	1%
11TH	HALE	DRAGT	15	2	2%
HOWARD	DRIVEWAY	AUTOPARK	28	2	3%
AUTOPARK	HOWARD	DRIVEWAY	15	2	2%
VALLEY	LAMBAR/PLAZA LAS PAL	AUTOPARK	20	2	2%
AUTOPARK	DRIVEWAY	HALE	12	2	1%
MARKET	VINEYARD	INDUSTRIAL	13	2	1%
VINEYARD	VENTURE	VENTURE	29	2	3%
BARHAM	OPPER	unknown	25	2	3%
COUNTRY CLUB	KAUANA LOA	MT WHITNEY	27	2	3%
MULBERRY	SELENA	ROSE RANCH	4	2	0%
MISSION	UNITED METH CHURCH	RICHMAR	9	2	1%
MISSION	PALOMAR	UNITED METH CHURCH	9	2	1%
BARHAM	SHELLY	WOODLAND	13	2	1%
TWIN OAKS VALLEY	BARHAM	DRIVEWAY	9	2	1%
CRAVEN	ECHO	RUSH DR	7	2	1%
BARHAM	RAMP	CR DEL SOL	23	2	3%
RANCHEROS	zone connector	DRIVEWAY	11	2	1%
WOODLAND	FAIRLANE	MISSION	9	2	1%
WOODLAND	ROCK SPRINGS	FAIRLANE	8	2	1%
NORDAHL	PINE HEIGHTS	DRIVEWAY	17	2	2%
MONTIEL	DRIVEWAY	VIA FLORA	29	2	3%
CRAVEN	FOXHALL	ECHO	7	2	1%
PALOMAR AIRPORT	YARROW	DRIVEWAY	6	2	1%
SR-56 WB	CAMINO SANTA FE	CARMEL COUNTRY	3	2	0%
PALA	COUSER CANYON	PALA DEL NORTE	1	2	0%
VALLEY CENTER	MILLER	CHAPARRAL TERRACE	4	2	0%
VALLEY CENTER	zone connector	RIDGE RANCH	6	2	1%
VALLEY CENTER	RIDGE RANCH	unknown	6	2	1%
VALLEY CENTER	HELLHOLE	LAKE WOHLFORD	2	2	0%
VALLEY CENTER	unknown	unknown	6	2	1%
SAN PASQUAL VALLEY	OAKWOOD GROVE	BANDY CANYON	7	2	1%
JULIAN	SLAUGHTERHOUSE	UNKNOWN	1	2	0%
WYNOLA	DRIVEWAY	FARMER	1	2	0%
SR-78	SC 860	GREAT STHRN OVRLND S	1	2	0%

NM	FXNM	TXNM	Q1	VMT1	PCT1
JULIAN	PUBLIC	RAMONA TRAILS	1	2	0%
SR-78	HORIZON VIEW	INDIAN OAKS	7	2	1%
VIA DE LA VALLE	14906	UNKNOWN	6	2	1%
EL CAMINO REAL	SEA COUNTRY LN	DERBY DOWNS	5	2	1%
DEL DIOS	BING CROSBY	UNKNOWN	14	2	2%
zone connector	zone 1114	ANDREASON	8	2	1%
zone connector	zone 1029	MONTIEL	20	2	2%
zone connector	zone 1114	VINEYARD	8	2	1%
zone connector	zone 4666	RAMP	0	2	0%
zone connector	zone 1032	CITRACADO	12	2	1%
zone connector	zone 1207	09TH	20	2	2%
zone connector	zone 1065	COUNTRY CLUB	12	2	1%
zone connector	zone 1117	COUNTRY CLUB	10	2	1%
zone connector	zone 1179	HOWARD	25	2	3%
DEL MAR HEIGHTS	HIGH BLUFF	EL CAMINO REAL	2	1	0%
MIRA MESA	REAGAN	WESTONHILL	3	1	0%
MIRA MESA	PARKDALE	MONTONGO	3	1	0%
BEAR VALLEY	NORTH COUNTY FAIR	VIA RANCHO	5	1	1%
VIA RANCHO	RAMP	BEAR VALLEY	5	1	1%
MIRA MESA	DABNEY	PARKDALE	3	1	0%
MIRA MESA	ADERMAN	DABNEY	3	1	0%
LA JOLLA PARKWAY	RAMP	RAMP	2	1	0%
TWIN PEAKS	SILVERSET	WOODCREEK RD	3	1	0%
MIRAMAR	BLACK MOUNTAIN	KEARNY VILLA	3	1	0%
PALOMAR AIRPORT	UNKNOWN	YARROW	5	1	1%
SAN MARCOS	UNKNOWN	RANCHO SANTA FE	7	1	1%
EL CAMINO REAL	TOWN CENTER	GARDEN VIEW	2	1	0%
MIRA MESA	BLACK MOUNTAIN	zone connector	4	1	0%
MELROSE	unknown	MEADOWBROOK	2	1	0%
PALOMAR AIRPORT	EAGLE	UNKNOWN	6	1	1%
MELROSE	POINSETTIA	UNKNOWN	5	1	1%
MELROSE	UNKNOWN	CARILLO	5	1	1%
SAN MARCOS	VIEWPOINT	UNKNOWN	6	1	1%
RAMP	SR-78 WB	SAN MARCOS	5	1	1%
OLIVENHAIN	TOWN CENTER	EL CAMINO REAL	4	1	0%
EL CAMINO REAL	QUARTER MILE	DEL MAR HEIGHTS	4	1	0%
HAVERFORD	PINE	ELM	1	1	0%
ASH	MISSION	ELMWOOD	4	1	0%
ASH	zone connector	MISSION	5	1	1%
09TH	S BROADWAY	JUNIPER	4	1	0%
09TH	ESCONDIDO	S BROADWAY	5	1	1%
ESCONDIDO	EUCALYPTUS	MORNINGSIDE	3	1	0%
PINE	CEDAR	unknown	5	1	1%
PINE	SR-78	CEDAR	5	1	1%
MISSION	QUINCE	zone connector	19	1	2%
WASHINGTON	HALE	METCALF	25	1	3%
NUTMEG	DRIVEWAY	EL NORTE	7	1	1%
WASHINGTON	ERICA	MIDWAY	4	1	0%
WASHINGTON	MIDWAY	zone connector	4	1	0%
MISSION	MIDWAY	PAULA	5	1	1%
ALGA	CORINTIA	EL FUERTE	2	1	0%
SR-78	YAQUI PASS	OLD KANE SPRINGS	0	1	0%

NM	FXNM	TXNM	Q1	VMT1	PCT1
SR-78	BORREGO SPRINGS	SPLIT MTN	0	1	0%
NUTMEG	zone connector	DRIVEWAY	5	1	1%
MONTIEL	DEODAR	VIA TERAMO	4	1	0%
02ND	GRAND	QUINCE	8	1	1%
SUNSET	ROYAL CREST	BEAR VALLEY	2	1	0%
METCALF	MISSION	DRIVEWAY	5	1	1%
LINCOLN	UNKNOWN	ASH	8	1	1%
LINCOLN	HARDING SB	UNKNOWN	8	1	1%
13TH	REDWOOD	QUINCE	6	1	1%
13TH	TULIP	UNKNOWN	9	1	1%
RAMP	I-15 SB	RANCHO BERNARDO	3	1	0%
DE LUZ	HARRIS	UNKNOWN	0	1	0%
HIGHLAND VALLEY	ARCHIE MOORE	RANGELAND	1	1	0%
CHAMPAGNE	zone connector	MOUNTAIN MEADOW	1	1	0%
VANDEGRIFT	WIRE MTN/MAIN GATE	RAMP	3	1	0%
MISSION	BUCHANAN	ROSE	7	1	1%
ESCONDIDO	13TH	15TH	7	1	1%
ESCONDIDO	WASHINGTON	BUS ACCESS	10	1	1%
GRAND	RAMP	SPRUCE	9	1	1%
RAMP	I-15 SB	CAM DEL NORTE	4	1	0%
RAMP	I-15 SB	CARMEL MTN	2	1	0%
SAN VICENTE	BUNNIE KING	unknown	2	1	0%
PINE	unknown	OLIVE	5	1	1%
JULIAN	SUTHERLAND	UNKNOWN	1	1	0%
JULIAN	UNKNOWN	PASEO PANTERA	1	1	0%
RAMP	I-15 SB	BERNARDO CENTER	4	1	0%
SYCAMORE	unknown	HIBISCUS	5	1	1%
RAMP	SR-52 EB	RAMP	3	1	0%
RAMP	ramp SR-163 NB	RAMP	4	1	0%
RAMP	ramp I-8 WB	RAMP	2	1	0%
RAMP	I-15 SB	I-805 SB	2	1	0%
SAN PASQUAL VALLEY	TEEPEE	HIGHGROVE	11	1	1%
SAN PASQUAL VALLEY	HIGHGROVE	OLD SAN PASQUAL	11	1	1%
MISSION	DAISY	FERN	5	1	1%
MISSION	SUMAC	CAMELLA	5	1	1%
MISSION	ROSE	SUMAC	5	1	1%
13TH	QUINCE	S PINE	13	1	1%
CHAMPAGNE	LAWERENCE WELK ACCES	zone connector	1	1	0%
PINE	OLIVE	zone connector	5	1	1%
RAMP	I-15 SB	RAMP	8	1	1%
I-8 WB	BUCKMAN SPRINGS	SUNRISE	0	1	0%
RAMP	ramp I-15 NB	I-15 NB	3	1	0%
I-8 WB	DUNBAR	LAKE JENNINGS PARK	0	1	0%
I-8 EB	LAKE JENNINGS PARK	DUNBAR	0	1	0%
I-8 EB	TAVERN	WEST WILLOWS	0	1	0%
I-8 WB	JAPATUL VALLEY	EAST WILLOWS	0	1	0%
I-8 WB	CAMERON TRUCK	BUCKMAN SPRINGS	0	1	0%
RAMP	SR-78 WB	ESCONDIDO	3	1	0%
RAMP	I-15 SB	MIRAMAR	2	1	0%
RAMP	SR-163 SB	SR-52 WB	2	1	0%
RAMP	ramp	RAMP	3	1	0%
RAMP	ramp SR-52 WB TEMPOR	ramp I-15 NB	5	1	1%

NM	FXNM	TXNM	Q1	VMT1	PCT1
RAMP	SR-163 SB	RAMP	2	1	0%
I-8 EB	JAPATUL VALLEY	PINE VALLEY	0	1	0%
I-15 SR56 RAMP	I-15 SB	RAMP	5	1	1%
HALE	unknown	TULIP	17	1	2%
RAMP	ramp I-15 NB	I-15 NB	5	1	1%
RAMP	ramp I-5 NB	I-8 EB	1	1	0%
RAMP	ramp SR-78 EB	SR-78 EB	7	1	1%
RAMP	I-8 WB	RAMP	2	1	0%
SYCAMORE	THIBODO	SHADOW RIDGE	7	1	1%
SR-67	IRON MOUNTAIN	zone connector	1	1	0%
SR-67	unknown	unknown	1	1	0%
SYCAMORE	HIBISCUS	OLEANDER	5	1	1%
BROADWAY	W CREST	MISSION	10	1	1%
BROADWAY	LINCOLN	W CREST	13	1	1%
BROADWAY	EL NORTE	ESPANAS GLEN	4	1	0%
N CENTRE CITY	JESMOND DENE	MESA ROCK	0	1	0%
NORDAHL	KNOB HILL	PINE HEIGHTS	13	1	1%
AUTUMN	DRIVEWAY	TIGER	2	1	0%
RANCHEROS	VALPREDA	UNKNOWN	8	1	1%
KNOLL	AUTUMN	DRIVEWAY	3	1	0%
DISCOVERY	LAKESHORE	CRAVEN	6	1	1%
DISCOVERY	UNKNOWN	MCMAHR	6	1	1%
DISCOVERY	VIA VERA CRUZ	LAKESHORE	6	1	1%
DISCOVERY	MCMAHR	APPLEWILDE	6	1	1%
VIA RANCHO	VALLEY	LAKE	12	1	1%
GRAND	PACIFIC	TAULBEES	4	1	0%
GRAND	TAULBEES	LAS POSAS	5	1	1%
AVNDA DEL DIABLO	HALE	VERMEL	3	1	0%
SPRINGBROOK	UNKNOWN	SPRINGHURST	1	1	0%
RAMP	I-15 SB	RAMP	2	1	0%
MIRAMAR	8606-NORTHGATE PLAZA	CAMINO RUIZ	3	1	0%
MIRAMAR	CARROLL	7590	2	1	0%
BENNETT	CHAPARRAL	KNOB HILL	8	1	1%
SAN PASQUAL VALLEY	CLOVERDALE	VIA RANCHO	11	1	1%
SAN PASQUAL VALLEY	zone connector	CLOVERDALE	11	1	1%
ENTERPRISE	ANDREASON	HARMONY GROVE	8	1	1%
FELICITA	DRIVEWAY	CENTRE CITY	11	1	1%
FELICITA	ESCONDIDO	DRIVEWAY	8	1	1%
QUINCE	11TH	W 12TH	7	1	1%
QUINCE	W 12TH	13TH	7	1	1%
CRISTIANITOS	CHRISTIANITOS	unknown	0	1	0%
MISSION	GAMBLE	HICKORY	15	1	2%
WASHINGTON	ESCONDIDO	DRIVEWAY	7	1	1%
WASHINGTON	JUNIPER	DRIVEWAY	4	1	0%
WASHINGTON	FIG	DATE	4	1	0%
WASHINGTON	DRIVEWAY	BROADWAY	6	1	1%
I-8 WB	WEST WILLOWS	TAVERN	0	1	0%
I-8 WB	EAST WILLOWS	WEST WILLOWS	0	1	0%
I-8 WB	TAVERN	DUNBAR	0	1	0%
I-8 EB	DUNBAR	TAVERN	0	1	0%
SAN PASQUAL VALLEY	ramp SR-125 SB	ramp SR-125 NB	9	1	1%
SR-163 SB	FRIARS	I-8 WB	7	1	1%

NM	FXNM	TXNM	Q1	VMT1	PCT1
SR-163 SB	I-8 EB	06TH EX	4	1	0%
SR-52 EB	CONVOY	SR-163 SB	3	1	0%
SR-52 WB	SR-163 SB	CONVOY	2	1	0%
SR-125 NB	SR-94 WB	LEMON	1	1	0%
I-5 NB	SR-76	VANDEGRIFT	5	1	1%
I-5 NB	VANDEGRIFT	VANDEGRIFT	3	1	0%
I-5 SB	VANDEGRIFT	SR-76	4	1	0%
I-805 NB	PLAZA	43RD	2	1	0%
SR-163 SB	SR-52 WB	CLAIREMONT MESA	9	1	1%
SR-52 EB	SR-163 SB	RUFFIN	3	1	0%
I-8 EB	FAIRMOUNT	WARING	2	1	0%
I-8 WB	COLLEGE	COLLEGE	1	1	0%
I-8 EB	COLLEGE	COLLEGE	1	1	0%
I-805 NB	43RD	IMPERIAL	2	1	0%
SR-163 NB	GENESEE	GENESEE	8	1	1%
I-805 SB	SR-15 SB	HOME	2	1	0%
I-8 EB	HOTEL CIRCLE SOUTH	SR-163 SB	3	1	0%
SR-163 SB	06TH EX	WASHINGTON	4	1	0%
SR-163 NB	WASHINGTON	06TH EX	4	1	0%
SR-163 SB	WASHINGTON	WASHINGTON	3	1	0%
SR-163 NB	WASHINGTON	WASHINGTON	4	1	0%
I-805 NB	PALM	PALM	1	1	0%
I-805 NB	ORANGE	ORANGE	1	1	0%
SR-78 WB	EL CAMINO REAL	JEFFERSON	8	1	1%
SR-78 EB	JEFFERSON	EL CAMINO REAL	8	1	1%
I-8 EB	CAM DEL RIO WEST	MORENA	3	1	0%
I-805 NB	H	BONITA	1	1	0%
I-8 EB	MIDWAY	I-5 SB	1	1	0%
SR-52 EB	REGENTS	REGENTS	1	1	0%
SR-52 EB	REGENTS	GENESEE	2	1	0%
SR-52 EB	GENESEE	GENESEE	2	1	0%
I-5 SB	SR-76	MISSION	5	1	1%
I-5 SB	MISSION	MISSION	5	1	1%
I-5 NB	MISSION	SR-76	5	1	1%
SR-52 WB	GENESEE	GENESEE	1	1	0%
SR-94 WB	COLLEGE GROVE	FEDERAL	0	1	0%
SR-56 WB	CARMEL CREEK	EL CAMINO REAL	3	1	0%
I-8 EB	HOTEL CIRCLE SOUTH	HOTEL CIRCLE SOUTH	3	1	0%
I-8 EB	HOTEL CIRCLE SOUTH	HOTEL CIRCLE SOUTH	3	1	0%
I-8 EB	HOTEL CIRCLE SOUTH	HOTEL CIRCLE SOUTH	3	1	0%
SR-52 WB	I-805 SB	GENESEE	1	1	0%
SR-52 WB	I-805 NB	I-805 NB	1	1	0%
SR-52 WB	CONVOY	I-805 NB	1	1	0%
I-8 EB	COLLEGE	LAKE MURRAY	1	1	0%
I-8 EB	LAKE MURRAY	LAKE MURRAY	1	1	0%
I-8 WB	WARING	FAIRMOUNT	2	1	0%
I-8 WB	WARING	WARING	2	1	0%
I-15 SB	40TH	I-805 SB	3	1	0%
I-15 SB	ADAMS	EL CAJON	3	1	0%
I-15 NB	EL CAJON	ADAMS	3	1	0%
I-15 NB	ADAMS	ADAMS	3	1	0%
I-15 NB	ADAMS	I-8 EB	3	1	0%

NM	FXNM	TXNM	Q1	VMT1	PCT1
I-15 NB	ADAMS	I-8 EB	3	1	0%
I-15 SB	BALBOA	BALBOA	7	1	1%
I-5 SB AUXILLARY	CARMEL MOUNTAIN		2	1	0%
I-5 SB AUXILLARY	CARMEL MOUNTAIN	CARMEL MOUNTAIN	2	1	0%
I-5 NB AUXILLARY	LRT-MIDCOAST	LRT-MIDCOAST	3	1	0%
I-5 SB	FOOTHILL TOLLWAY SB	BASILONE	3	1	0%
I-5 SB	CRISTIANITOS	BASILONE	3	1	0%
I-5 NB	BASILONE	CRISTIANITOS	3	1	0%
I-5 NB	BASILONE	CRISTIANITOS	3	1	0%
I-5 SB	CRISTIANITOS	BASILONE	3	1	0%
I-8 WB	COLLEGE	WARING	2	1	0%
I-15 SB	STEWART CANYON	STEWART CANYON	4	1	0%
I-15 NB	STEWART CANYON	STEWART CANYON	5	1	1%
SR-52 WB	NEW MISSION GORGE	MISSION GORGE	2	1	0%
SR-52 EB	MISSION GORGE	NEW MISSION GORGE	1	1	0%
SR-52 WB	MAST	SANTO	2	1	0%
SR-52 WB	MISSION GORGE	MAST	2	1	0%
SR-52 WB	MAST	MAST	2	1	0%
SR-56 WB	CARMEL CREEK	CARMEL CREEK	3	1	0%
SR-56 EB	CAMINO RUIZ	CAMINO RUIZ	4	1	0%
SR-56 WB	CAMINO RUIZ	CAMINO RUIZ	3	1	0%
SR-56 WB	CAMINO RUIZ	CAMINO RUIZ	3	1	0%
SR-56 EB	CAMINO RUIZ	CAMINO RUIZ	4	1	0%
SR-56 WB	CARMEL COUNTRY	CARMEL COUNTRY	3	1	0%
I-15 SB	I-8 WB	I-8 WB	4	1	0%
I-15 NB	I-805 NB	40TH	3	1	0%
SR-125 NB	SR-94 EB	CAMPO	1	1	0%
I-5 NB	SR-76	SR-76	5	1	1%
I-5 SB	CRISTIANITOS	CRISTIANITOS	3	1	0%
I-5 NB	CRISTIANITOS	CRISTIANITOS	3	1	0%
I-8 WB	LAKE MURRAY	COLLEGE	1	1	0%
I-8 WB	SR-163 SB		2	1	0%
RAMP	ramp SR-78 EB	SR-78 EB	7	1	1%
RAMP	SAN MARCOS	ramp SR-78 EB	7	1	1%
I-15 NB	I-8 EB	I-8 EB	3	1	0%
I-15 NB	I-8 EB	I-8 EB	3	1	0%
RAMP	SR-52 WB TEMPORARY	RAMP	2	1	0%
SR52-SR125 RAMP	ramp SR-52 EB	SR-52 EB	2	1	0%
SR-78	RIVERWOOD	UNKNOWN	1	1	0%
I-8 WB	MIDWAY	SUNSET CLIFFS	1	1	0%
ESPOLA	unknown	unknown	2	1	0%
SR-78	unknown	PINE	5	1	1%
POMERADO	GRANDEE	unknown	2	1	0%
BERNARDO HEIGHTS	VIA EMBELESO	PASEO LUCIDO	2	1	0%
I-15 SB	UNIVERSITY	40TH	3	1	0%
I-15 NB	40TH	UNIVERSITY	3	1	0%
SR-163 NB	I-8 EB	I-8 WB	4	1	0%
SR-163 SB	I-8 EB	I-8 EB	4	1	0%
SR-163 NB	QUINCE	RICHMOND	4	1	0%
I-805 NB	MURRAY RIDGE	MURRAY RIDGE	1	1	0%
I-805 SB	HOME	SR-94 EB	2	1	0%
I-805 NB	SR-94 WB	HOME	2	1	0%

NM	FXNM	TXNM	Q1	VMT1	PCT1
I-805 NB	IMPERIAL	IMPERIAL	2	1	0%
I-805 NB	TELEGRAPH CANYON	TELEGRAPH CANYON	1	1	0%
SAN MARCOS	BENT	zone connector	6	1	1%
SAN MARCOS	zone connector	GRAND	7	1	1%
SAN MARCOS	RANCHO SANTA FE	SECURITY	6	1	1%
MULBERRY	DANE	VINEYARD	6	1	1%
RICHLAND	BERRYHILL	ROCK SPRINGS	7	1	1%
VALLEY	11TH	unknown	5	1	1%
BEAR VALLEY	SUNSET	OLD SPANISH	2	1	0%
I-15 HOV SB	CARMEL MTN	SR-56 EB	3	1	0%
I-15 HOV NB	MIRA MESA	RANCHO PENASQUITOS	3	1	0%
I-8 EB	I-8 EB	I-8 EB	1	1	0%
SR-163 NB	I-5 NB	QUINCE	4	1	0%
SR-75 SB	I-5 SB	GLORIETTA	0	1	0%
SR-75 NB	04TH	GLORIETTA	0	1	0%
SR-163 SB	I-5 NB	10TH	1	1	0%
I-15 NB	UNIVERSITY	EL CAJON	3	1	0%
I-15 SB	EL CAJON	UNIVERSITY	3	1	0%
I-805 NB	HOME	SR-15 NB	2	1	0%
I-805 NB	PLAZA	PLAZA	2	1	0%
I-805 SB	PLAZA	SR-54 WB	1	1	0%
I-805 NB	SR-54 WB	PLAZA	2	1	0%
I-15 HOV SB	POMERADO	POMERADO	1	1	0%
ELFIN FOREST	SAN ELIJO RD	SAN ELIJO RD	11	1	1%
I-805 NB	SR-54 EB	SWEETWATER	1	1	0%
SR-125 SB	TROY	JAMACHA ROAD	1	1	0%
SR-125 NB	JAMACHA ROAD	TROY	1	1	0%
SR-125 SB	JAMACHA ROAD	JAMACHA ROAD	1	1	0%
SR-125 NB	JAMACHA ROAD	JAMACHA ROAD	1	1	0%
SR-125 NB	SR 54	JAMACHA ROAD	1	1	0%
SR-78 WB	LAS POSAS	LAS POSAS	24	1	3%
TWIN PEAKS	MAPLEWOOD	SILVERSET	3	1	0%
POWAY	ESPOLA	BLUE CRYSTAL	1	1	0%
ESPOLA	MARTINCOIT	ORCHARD BEND	2	1	0%
CITRUS	UNKNOWN	WASHINGTON	6	1	1%
FELICITA	JUNIPER	TAMARME	9	1	1%
LINDA VISTA	LAS FLORES	RANCHO SANTA FE	2	1	0%
MISSION	PALOMAR COL BUS ACC	PALOMAR	5	1	1%
SAN ELIJO RD	ELFIN FOREST	ELFIN FOREST	11	1	1%
I-15 SB	FRIARS	I-8 WB	6	1	1%
I-15 NB	I-8 WB	FRIARS	6	1	1%
I-15 HOV SB	MIRA MESA	POMERADO	1	1	0%
I-15 NB	SR-78 EB	SR-78 WB	4	1	0%
RAMP	I-8 EB	ramp I-8 EB	3	1	0%
RAMP	ramp	RAMP	3	1	0%
SR-52 WB	CONVOY	CONVOY	1	1	0%
SR-52 WB	CONVOY	CONVOY	1	1	0%
SR-52 EB	CONVOY	CONVOY	3	1	0%
SR-52 EB	CONVOY	CONVOY	3	1	0%
I-15 SB	I-8 EB	ADAMS	4	1	0%
I-15 SB	ADAMS	ADAMS	3	1	0%
SR-52 WB	SANTO	SANTO	2	1	0%

NM	FXNM	TXNM	Q1	VMT1	PCT1
SR-52 WB	MAST	SANTO	2	1	0%
SR-52 EB	SANTO	MAST	1	1	0%
SR-52 EB	SANTO	MAST	1	1	0%
I-15 NB	BALBOA	BALBOA	7	1	1%
SR-163 SB	GENESEE	GENESEE	7	1	1%
SR-163 SB	FRIARS	FRIARS	7	1	1%
SR-163 SB	FRIARS	FRIARS	7	1	1%
OLIVENHAIN	EL CAMINO REAL	unknown	7	1	1%
OLIVENHAIN	unknown	AMARGOSA	7	1	1%
OLIVENHAIN	AMARGOSA	LOS PINOS	7	1	1%
OLIVENHAIN	LOS PINOS	unknown	7	1	1%
MISSION	zone connector	CENTRE CITY	19	1	2%
MISSION	CENTRE CITY	unknown	18	1	2%
MISSION	NORDAHL	UNKNOWN	87	1	10%
SR-52 EB	I-15 NB	SANTO	1	1	0%
SR-52 WB	SANTO	I-15 NB	2	1	0%
SR-52 WB	SANTO	I-15 NB	2	1	0%
I-8 EB	WARING	COLLEGE	2	1	0%
SCRIPPS POWAY	POMERADO	KIRKHAM	1	1	0%
RAMP	ramp SR-78 WB	RAMP	2	1	0%
RAMP	SR-78 WB	LAS POSAS	4	1	0%
RAMP	ramp SR-78 EB	SR-78 EB	6	1	1%
ARMADA	FLEET	unknown	2	1	0%
ARMADA	unknown	PALOMAR AIRPORT	3	1	0%
RANCHO SANTA FE	unknown	SAN ELIJO RD	9	1	1%
RANCHO SANTA FE	QUESTHAVEN	unknown	9	1	1%
SR-56 EB	EL CAMINO REAL	CARMEL CREEK	4	1	0%
SR-52 EB	I-5 NB	REGENTS	1	1	0%
I-8 WB	FAIRMOUNT	I-15 NB	2	1	0%
I-15 SB	I-8 WB	I-8 WB	4	1	0%
VIA RANCHO	FELICITA	MONTESANO	9	1	1%
SR-52 EB	GENESEE	I-805 SB	2	1	0%
VALLEY CENTER	WOODS VALLEY	zone connector	5	1	1%
LAKE WOHLFORD	KUMEYAAY	PARADISE MTN	2	1	0%
VALLEY CENTER	TURTLE ROCK	VESPER	2	1	0%
CHRISTIANITOS	zone connector	CAMP TALEGA	0	1	0%
PASEO DELICIAS	DEL DIOS ROUNDABOUT1	VIA DE LA VALLE	11	1	1%
PASEO DELICIAS	DEL DIOS ROUNDABOUT1	LA GRANADA	4	1	0%
PASEO DELICIAS	LA VALLE PLATEADA	DEL DIOS ROUNDABOUT1	11	1	1%
PASEO DELICIAS	LA VALLE PLATEADA	DEL DIOS ROUNDABOUT2	11	1	1%
PASEO DELICIAS	DEL DIOS ROUNDABOUT2	EL MONTEVIDEO	12	1	1%
SR-163 NB	11TH	I-5 NB	1	1	0%
MAGNOLIA	PILE	PENN	1	1	0%
HIGHLAND VALLEY	unknown	BANDY CANYON	1	1	0%
HIGHLAND VALLEY	PASEO PENASCO	ramp SR-125 SB	1	1	0%
I-8 WB	FASHION VALLEY	HOTEL CIRCLE NORTH	2	1	0%
I-8 EB	TAYLOR	TAYLOR	3	1	0%
I-8 EB	MORENA	TAYLOR	3	1	0%
I-8 EB	HOTEL CIRCLE NORTH	HOTEL CIRCLE SOUTH	3	1	0%
I-8 WB	MORENA	I-5 SB	2	1	0%
I-8 WB	TAYLOR	MORENA	2	1	0%
I-15 HOV NB	I-15 NB	ramp I-15 NB	1	1	0%

NM	FXNM	TXNM	Q1	VMT1	PCT1
TED WILLIAMS	RAMP	FREEWAY RAMP	6	1	1%
FREEWAY RAMP	TED WILLIAMS	ramp I-15 NB	4	1	0%
FREEWAY RAMP	ramp I-15 NB	I-15 NB	4	1	0%
LAKE WOHLFORD	PARADISE MTN	zone connector	2	1	0%
RAMP	I-5 SB	RAMP	6	1	1%
I-5 SB	CASSIDY	VISTA WY	6	1	1%
RAMP	I-5 HOV NB	SR-78 EB	1	1	0%
I-5 NB	OCEANSIDE	MISSION	6	1	1%
SR-125 NB	TROY	SR-94 WB	1	1	0%
SR-125 SB	SR-94 WB	TROY	1	1	0%
RANCHEROS	UNKNOWN	WOODLAND	11	1	1%
I-15 HOV SB	CARMEL MTN	SR-56 EB	3	1	0%
I-15 HOV NB	SR-56 EB	CARMEL MTN	4	1	0%
I-15 HOV NB	SR-56 EB	CARMEL MTN	4	1	0%
I-15 HOV NB	SR-56 EB	CARMEL MTN	4	1	0%
I-15 SB	CITRACADO	CENTRE CITY	48	1	5%
ESPOLA	unknown	POWAY	1	1	0%
I-805 SB	I-5 SB	SORRENTO VALLEY	1	1	0%
I-5 NB	GENESEE	SORRENTO VALLEY	3	1	0%
I-15 HOV SB	VIA RANCHO	VIA RANCHO	5	1	1%
I-15 SB	CAM DEL NORTE	CAM DEL NORTE	33	1	4%
VALLEY CENTER	unknown	LAKE WOHLFORD	6	1	1%
HARMONY GROVE	KAUANA LOA	AVENIDA DEL DIABLO	2	1	0%
I-5 SB AUXILLARY			2	1	0%
I-5 NB AUXILLARY			3	1	0%
I-805 NB	PALOMAR	TELEGRAPH CANYON	1	1	0%
LAKE WOHLFORD	NYEMII PASS	KUMEYAAY	2	1	0%
DISCOVERY	UNKNOWN	TWIN OAKS VALLEY	6	1	1%
VALLEY CENTER	GOLSH	unknown	2	1	0%
VALLEY CENTER	unknown	WOODS VALLEY	5	1	1%
DEL DIOS	MT ISRAEL	RANCHO	14	1	2%
DEL DIOS	UNKNOWN	RANCHO DEL RIO	14	1	2%
DEL DIOS	DEL DIOS ROUNDABOUT	EL CAMINO DEL NORTE	13	1	1%
PASEO DELICIAS	EL CAMINO DEL NORTE	DEL DIOS ROUNDABOUT	12	1	1%
EL CAMINO DEL NORTE	zone connector	LAGO VISTA	1	1	0%
EL CAMINO DEL NORTE	VAL SERENO	LAS MONTANAS	1	1	0%
LINEA DEL CIELO	zone connector	RAMBLA DE LAS FLORES	3	1	0%
LINEA DEL CIELO	EL SECRETO	zone connector	3	1	0%
LINEA DEL CIELO	PASEO DELICIAS	EL SECRETO	3	1	0%
LOMAS SANTA FE	SUN VALLEY	LINEA DEL CIELO	3	1	0%
LINEA DEL CIELO	EL CAMINO REAL	LOMAS SANTA FE	3	1	0%
VIA DE LA VALLE	LAS PALOMAS	CANCHA DE GOLF	6	1	1%
VIA DE LA VALLE	CAMTO PORTA DELGADA	14906	6	1	1%
I-8 WB	CRESTWOOD	CAMERON TRUCK	0	1	0%
QUAIL GARDENS	zone connector	unknown	2	1	0%
SR-163 NB	ROBINSON	10TH	4	1	0%
SR-163 NB	ROBINSON	10TH	4	1	0%
SR-163 SB	UNIVERSITY	ROBINSON	3	1	0%
SR-163 SB	UNIVERSITY	ROBINSON	3	1	0%
SR-163 NB	I-8 WB	FRIARS	4	1	0%
SR-163 NB	I-8 WB	FRIARS	4	1	0%
SR-163 NB	I-8 WB	FRIARS	4	1	0%

NM	FXNM	TXNM	Q1	VMT1	PCT1
SR-163 SB	I-8 WB	I-8 EB	4	1	0%
I-805 NB	ORANGE	PALOMAR	1	1	0%
SR-52 EB	I-805 SB	I-805 NB	2	1	0%
I-15 HOV SB	VIA RANCHO	VIA RANCHO	3	1	0%
RAMP	I-15 SB	VIA RANCHO	4	1	0%
I-15 HOV SB	VIA RANCHO	POMERADO	4	1	0%
SR-76	UNKNOWN	UNKNOWN	0	1	0%
RANCHO SANTA FE	MELROSE	LA COSTA MEADOWS	9	1	1%
WASHINGTON	KAILE LN	UNKNOWN	8	1	1%
WASHINGTON	UNKNOWN	EI NORTE PKWY	8	1	1%
CITRUS	MISSION	UNKNOWN	6	1	1%
TWIN OAKS VALLEY	CHRISTEN	RICHMAR	4	1	0%
PALA	GIRD	MONSERATE HILLS	1	1	0%
EUCALYPTUS	STONERIDGE	VIA RANCHO	2	1	0%
JULIAN	UNKNOWN	SR-79	1	1	0%
I-15 HOV SB	I-15 SB	RANCHO PENASQUITOS	1	1	0%
SR-56 EB	CARMEL CREEK	CARMEL CREEK	4	1	0%
SR-56 EB	CARMEL CREEK	CARMEL CREEK	4	1	0%
SR-125 NB	NAVAJO	GROSSMONT COLLEGE DR	1	1	0%
SR-125 NB	AMAYA	NAVAJO	1	1	0%
MISSION	RICHMAR	KNOLL	9	1	1%
ELFIN FOREST	CALISTOGA	unknown	23	1	3%
ELFIN FOREST	ELFIN FOREST	CALISTOGA	23	1	3%
CRAVEN	RUSH DR	TWIN OAKS VALLEY	7	1	1%
I-5 SB	I-805 SB	SORRENTO VALLEY	2	1	0%
I-5 SB	OCEANSIDE	OCEANSIDE	5	1	1%
I-5 NB	OCEANSIDE	OCEANSIDE	6	1	1%
I-5 SB	VANDEGRIFT	VANDEGRIFT	3	1	0%
I-5 NB	VANDEGRIFT	VANDEGRIFT	3	1	0%
I-15 SB	PALA	PALA	4	1	0%
PALOMAR AIRPORT	HIDDEN VALLEY	AVIARA	4	1	0%
I-805 NB	SR-94 WB	MARKET	2	1	0%
FARADAY	PRIESTLY	EL CAMINO REAL	3	1	0%
EL CAMINO REAL	UNKNOWN	ORION	3	1	0%
EL CAMINO REAL	FARADAY	UNKNOWN	3	1	0%
EL CAMINO REAL	ORION	PALOMAR AIRPORT	3	1	0%
PALOMAR AIRPORT	UNKNOWN	EL FUERTE	9	1	1%
EL FUERTE	UNKNOWN	CACATUA	2	1	0%
MELROSE	UNKNOWN	POINSETTIA	5	1	1%
MELROSE	BRAVADO	UNKNOWN	5	1	1%
MELROSE	unknown	BRAVADO	5	1	1%
MELROSE	PALOMAR AIRPORT	unknown	5	1	1%
PALOMAR AIRPORT	UNKNOWN	EAGLE	6	1	1%
MELROSE	VIA PATRON	unknown	5	1	1%
RANCHO SANTA FE	MELROSE	MELROSE	9	1	1%
MELROSE	MELROSE	RANCHO SANTA FE	10	1	1%
ALGA	EL FUERTE	PASEO ABBRAZO	5	1	1%
ALGA	PASEO ABBRAZO	XANA	5	1	1%
ALGA	ALICANTE	CANDELERO	2	1	0%
ALGA	ESTRELLA DE MAR	ALICANTE	2	1	0%
OLIVENHAIN	unknown	RANCHO SANTA FE	7	1	1%
LEUCADIA	GARDEN VIEW	TOWN CENTER	3	1	0%

NM	FXNM	TXNM	Q1	VMT1	PCT1
LA COSTA	DRIVEWAY	CASTILLA	1	1	0%
PALOMAR AIRPORT	UNKNOWN	PALOMAR OAKS	4	1	0%
MISSION	DAN	DRIVEWAY	19	1	2%
09TH	QUINCE	S PINE	17	1	2%
QUINCE	09TH	11TH	7	1	1%
NUTMEG	CENTRE CITY	ROCKHOFF	1	1	0%
COUNTRY CLUB	CARAWAY	MONTEGO	3	1	0%
MELROSE	unknown	ALGA	5	1	1%
ALGA	XANA	MELROSE	5	1	1%
GRAND	RAMP	TULIP	9	1	1%
VALLEY	LA TERRAZA	DEL DIOS HWY	9	1	1%
VALLEY	DEL DIOS HWY	RAMP	12	1	1%
NORDAHL	unknown	MONTIEL	19	1	2%
SAN ELIJO RD	COOKE ST	ELFIN FOREST	11	1	1%
SAN ELIJO RD	ELFIN FOREST	COOKE ST	11	1	1%
PALA	UNKNOWN	RICE CANYON	1	1	0%
RAMP	SR-78 WB	EMERALD	2	1	0%
MAR VISTA	MIRAMAR	BUENA VISTA	2	1	0%
RAMP	SR-78 WB	SYCAMORE	5	1	1%
SYCAMORE	RAMP	THIBODO	8	1	1%
RAMP	SYCAMORE	ramp SR-78 EB	7	1	1%
BUENA VISTA DR	FERN	WESLEY	1	1	0%
SYCAMORE	GREEN OAK	DRIVEWAY	5	1	1%
SYCAMORE	DRIVEWAY	LA MIRADA	4	1	0%
SYCAMORE	SHADOW RIDGE	DRIVEWAY	6	1	1%
SYCAMORE	zone connector	GREEN OAK	5	1	1%
MISSION	SANTA FE	COLLEGE	1	1	0%
VANDEGRIFT	CASTELLANO	DOUGLAS	1	1	0%
LOMAS SANTA FE	LAS BANDERAS	CAMINO DE LAS VILLAS	2	1	0%
NUTMEG	LA PALOMA	VIA ALEXANDRA	4	1	0%
NUTMEG	COUNTRY CLUB	LA PALOMA	4	1	0%
CENTRE CITY	09TH	CENTRE CITY NB	8	1	1%
CENTRE CITY	CENTRE CITY NB	13TH	8	1	1%
CENTRE CITY SB	CENTRE CITY	CENTRE CITY NB	5	1	1%
CENTRE CITY	13TH	CENTRE CITY NB	14	1	1%
SEVEN OAKS	EL NORTE	BORDEN	3	1	0%
MORNING VIEW	EL NORTE	DRIVEWAY	4	1	0%
SEVEN OAKES	HOMESTEAD	ROCK SPRINGS	4	1	0%
SEVEN OAKES	BORDEN	HOMESTEAD	3	1	0%
LINCOLN	DRIVEWAY	AVOCADO	6	1	1%
MORNING VIEW	1312	DRIVEWAY	5	1	1%
MORNING VIEW	DRIVEWAY	LINCOLN	5	1	1%
MORNING VIEW	MORNINGVIEW TERRACE	DRIVEWAY	5	1	1%
MORNING VIEW	DRIVEWAY	1312	5	1	1%
LINCOLN	METCALF	ROCK SPRINGS	3	1	0%
BROADWAY	ESPANAS GLEN	DRIVEWAY	5	1	1%
BROADWAY	DRIVEWAY	LINCOLN AVE	6	1	1%
LINCOLN	BEGONIA	ROSE	4	1	0%
LINCOLN	UNKNOWN	HARDING NB	5	1	1%
MISSION	N BEECH	ASH	8	1	1%
LINCOLN	FIG	DRIVEWAY	15	1	2%
MISSION	DRIVEWAY	ESCONDIDO	14	1	2%

NM	FXNM	TXNM	Q1	VMT1	PCT1
METCALF	LINCOLN	DRIVEWAY	4	1	0%
WASHINGTON	DRIVEWAY	CENTRE CITY	20	1	2%
WASHINGTON	QUINCE	DRIVEWAY	21	1	2%
MISSION	DRIVEWAY	BROADWAY	8	1	1%
MISSION	ESCONDIDO	DRIVEWAY	10	1	1%
MISSION	N JUNIPER	PARK	15	1	2%
MISSION	PARK	GAMBLE	15	1	2%
MISSION	HICKORY	N GRAPE	12	1	1%
MISSION	N GRAPE	FIG	12	1	1%
MISSION	DRIVEWAY	CEDAR	10	1	1%
WASHINGTON	HARDING SB	MILLS	3	1	0%
WASHINGTON	ASH	HARDING	3	1	0%
MISSION	HOOVER	HARDING SB	9	1	1%
MISSION	HARDING NB	BUCHANAN	8	1	1%
ROSE	WILSON	WASHINGTON	3	1	0%
MISSION	PAULA	PITMAN	4	1	0%
WASHINGTON	zone connector	PITMAN	4	1	0%
WASHINGTON	JUSTIN	KAILE LN	8	1	1%
WASHINGTON	unknown	E WASHINGTON	9	1	1%
WASHINGTON	E WASHINGTON	EL NORTE	9	1	1%
WASHINGTON	EL NORTE	JUSTIN	8	1	1%
VALLEY	EUREKA	WASHINGTON	8	1	1%
WASHINGTON	EI NORTE PKWY	VALLEY	8	1	1%
WASHINGTON	ROSE	ASTER	4	1	0%
HARDING	WASHINGTON	DRIVEWAY	6	1	1%
WASHINGTON	BROADWAY	WAVERLY	7	1	1%
WASHINGTON	MEANDER GLEN	ESCONDIDO	17	1	2%
WASHINGTON	CENTRE CITY	MEANDER GLEN	17	1	2%
QUINCE	WASHINGTON	GANNON	4	1	0%
TULIP	DRIVEWAY	VALLEY	9	1	1%
JUNIPER	09TH	E 11TH	4	1	0%
SAN PASQUAL VALLEY	BEAR VALLEY	CITRUS	11	1	1%
IDAHO	PARK HILL	ENCINO	4	1	0%
TULIP	09TH	W 11TH	10	1	1%
TULIP	W 11TH	13TH	9	1	1%
CENTRE CITY SB	CENTRE CITY	RAMP	6	1	1%
ESCONDIDO	15TH	DRIVEWAY	6	1	1%
CENTRE CITY	CENTRE CITY NB	RAMP	14	1	1%
FELICITA	TAMARME	S MAPLE	10	1	1%
FELICITA	S MAPLE	ESCONDIDO	10	1	1%
17TH	UNKNOWN	HIGH CREST	8	1	1%
IDAHO	JUNIPER	WILMA	4	1	0%
17TH	HIGH CREST	ENCINO	8	1	1%
17TH	JUNIPER	COUNTRY	9	1	1%
17TH	COUNTRY	UNKNOWN	9	1	1%
SUNSET	ESCONDIDO	AVOCADO CREST	2	1	0%
FRONTAGE	VIA RANCHO	LRT-STATION	4	1	0%
RAMP	ramp I-15 NB	I-15 NB	4	1	0%
VALLEY	unknown	AVNDA DEL DIABLO	5	1	1%
11TH	VALLEY	FUN	11	1	1%
ANDREASON	DRIVEWAY	ENTERPRISE	8	1	1%
AUTOPARK	DRIVEWAY	AUTO PARK S	15	1	2%

NM	FXNM	TXNM	Q1	VMT1	PCT1
AUTOPARK	AUTO PARK S	HALE	12	1	1%
VALLEY	RAMP	LAMBAR/PLAZA LAS PAL	12	1	1%
INDUSTRIAL	ANDREASON	DRIVEWAY	6	1	1%
VENTURE	VINEYARD	SIMPSON	8	1	1%
CITRACADO	VINEYARD	DRIVEWAY	4	1	0%
DEODAR	VIA SALERNO	MONTIEL	5	1	1%
DEODAR	OASIS	VIA SALERNO	5	1	1%
TWIN OAKS VALLEY	CASSOU	LA CIENEGA	1	1	0%
OLIVE	SYCAMORE	MULBERRY	2	1	0%
MULBERRY	OLIVE	COX	2	1	0%
SAN MARCOS	TIGER	PICO	5	1	1%
MULBERRY	LA CIENEGA	WOODWARD	3	1	0%
MULBERRY	WOODWARD	TRES RANCHOS	4	1	0%
MULBERRY	SNOWBERRY	VEREDA	7	1	1%
MULBERRY	VEREDA	BORDEN	7	1	1%
ROCK SPRINGS	RICHLAND	RICHLAND	7	1	1%
ROCK SPRINGS	LARCHWOOD	WOODLAND	7	1	1%
MULBERRY	BORDEN	DRIVEWAY	7	1	1%
MULBERRY	DRIVEWAY	MISSION	7	1	1%
TWIN OAKS VALLEY	BORDEN	DRIVEWAY	4	1	0%
RICHMAR	FIREBIRD	TWIN OAKS VALLEY	5	1	1%
BORDEN	AZELEA	TWIN OAKS VALLEY	4	1	0%
BORDEN	PALOMAR	BEL ESPRIT	4	1	0%
BORDEN	PALO ALTO	AZELEA	4	1	0%
PALOMAR	PALOMAR	BORDEN	3	1	0%
PALOMAR	Q	PALOMAR	4	1	0%
MISSION	N PACIFIC	LAS POSAS	2	1	0%
SAN MARCOS	DRIVEWAY	WESTLAKE	5	1	1%
SAN MARCOS	TWIN OAKS VALLEY	RANCHEROS	6	1	1%
SAN MARCOS	RANCHEROS	SAN MARCOS CIVIC CTR	6	1	1%
RANCHEROS	DRIVEWAY	VALPREDA	2	1	0%
VALPREDA	DRIVEWAY	RANCHEROS	6	1	1%
RANCHEROS	UNKNOWN	DRIVEWAY	8	1	1%
W LA MOREE	BARHAM	E BARHAM	9	1	1%
CARMEL	VENTURE	BARHAM	2	1	0%
TWIN OAKS VALLEY	DRIVEWAY	CRAVEN	9	1	1%
W LA MOREE	VIA DEL CAMPO	LA MOREE	9	1	1%
LA MOREE	CAMTO A CASA	W LA MOREE	10	1	1%
LA MOREE	PUEBLO	GRANITE	10	1	1%
LA MOREE	GRANITE	PUEBLO	10	1	1%
BARHAM	CR DEL SOL	BENNETT	23	1	3%
BENNETT	CASA REAL	ROCK SPRINGS	5	1	1%
BENNETT	VIA LA RANCHITA	CALLE CRUCERO	8	1	1%
BENNETT	KNOB HILL	VIA LA RANCHITA	8	1	1%
BENNETT	CALLE CRUCERO	MONTIEL	8	1	1%
BENNETT	MONTIEL	MISSION	8	1	1%
NORDAHL	CENTER	unknown	19	1	2%
NORDAHL	DRIVEWAY	CENTER	17	1	2%
MONTIEL	NORDAHL	DRIVEWAY	29	1	3%
PALOMAR AIRPORT	ARMADA	UNKNOWN	4	1	0%
PALOMAR AIRPORT	DRIVEWAY	EL CAMINO REAL	6	1	1%
TWIN OAKS	TWIN OAKS VALLEY	VILLAGE	2	1	0%

NM	FXNM	TXNM	Q1	VMT1	PCT1
TWIN OAKS	VILLAGE	VILLAGE	2	1	0%
GRAND	BENT	DRIVEWAY	3	1	0%
SAN MARCOS	PARK	UNKNOWN	5	1	1%
SAN MARCOS	VIA VERA CRUZ	PARK	4	1	0%
DISCOVERY	SAN PABLO	LA SOMBRA	5	1	1%
DISCOVERY	LA SOMBRA	UNKNOWN	5	1	1%
SAN MARCOS	LAS POSAS	DRIVEWAY	3	1	0%
SAN MARCOS	DRIVEWAY	VIA VERA CRUZ	4	1	0%
DISCOVERY	SAN MARCOS	SAN PABLO	4	1	0%
SAN MARCOS	SECURITY	DISCOVERY	7	1	1%
BENNETT	ROCK SPRINGS	W AUGUSTA	7	1	1%
BENNETT	W AUGUSTA	CHAPARRAL	7	1	1%
LINDA VISTA	POINSETTIA	PUESTA DEL SOL	2	1	0%
MELROSE	DIAMOND	SAN ELIJO RD	1	1	0%
MISSION	HAMILTON	DAVIS	1	1	0%
MISSION	EL PAISANO	RED MOUNTAIN HEIGHTS	1	1	0%
MISSION	RANGER	OLD HWY 395	1	1	0%
RECHE	RABBIT HILL	AQUEDUCT	1	1	0%
OLD HWY 395	TECALOTE	PALA MESA	1	1	0%
PALA	MONSERATE HILLS	SAGE	1	1	0%
SR-125 NB	LEMON	GROSSMONT	1	1	0%
I-15 SB	I-805 SB	I-805 SB	1	1	0%
I-15 SB	I-805 SB	SR-94 WB	1	1	0%
PALA	PALA DEL NORTE	zone connector	1	1	0%
PALA	zone connector	DRIVEWAY	1	1	0%
VALLEY CENTER	DRIVEWAY	GOLSH	1	1	0%
SR-76	UNKNOWN	SENGME OAKS	0	1	0%
OLD CASTLE	GORDON HILL	DRIVEWAY	0	1	0%
VALLEY CENTER	CALLE DE VISTA	zone connector	4	1	0%
COLE GRADE	MILCO	OAKWOOD GLEN	1	1	0%
COLE GRADE	FRUITVALE	VALLEY CENTER SCHOOL	2	1	0%
SR-76	RINCON RANCH	PAUMA RANCHO	0	1	0%
SR-76	PAUMA RANCHO	SOUTH GRADE	0	1	0%
SR-76	DRIVEWAY	RINCON RANCH	1	1	0%
COMET	DRIVEWAY	MISSION	1	1	0%
MISSION	COMET	PALOMAR COL BUS ACC	5	1	1%
VALLEY CENTER	BOUCHER HEIGHTS	KUUTPAT	2	1	0%
VALLEY CENTER	MACTAN	DRIVEWAY	2	1	0%
VALLEY CENTER	IRISH OAKS	TURTLE ROCK	2	1	0%
VALLEY CENTER	CHAPARRAL TERRACE	LILAC	4	1	0%
VALLEY CENTER	INDIAN CREEK	MILLER	4	1	0%
VALLEY CENTER	COLE GRADE	INDIAN CREEK	4	1	0%
VALLEY CENTER	zone connector	SUNDAY	5	1	1%
VALLEY CENTER	SUNDAY	DRIVEWAY	5	1	1%
VALLEY CENTER	LILAC	CALLE DE VISTA	4	1	0%
VALLEY CENTER	MOUNTAIN MEADOW	CHARLAN	5	1	1%
VALLEY CENTER	unknown	HELLHOLE	2	1	0%
LAKE WOHLFORD	STATION	N CANAL	2	1	0%
VALLEY CENTER	OMISH	BOUCHER HEIGHTS	2	1	0%
LAKE WOHLFORD	DRIVEWAY	GUEJITO	2	1	0%
LAKE WOHLFORD	UNKNOWN	PAINTBALL	2	1	0%
VALLEY CENTER	unknown	unknown	6	1	1%

NM	FXNM	TXNM	Q1	VMT1	PCT1
SR-79	zone connector	SR-76	0	1	0%
SAN PASQUAL VALLEY	SAN PASQUAL ACADEMY	UNNAMED 12D	7	1	1%
SR-78	SAN PASQUAL VALLEY	SAN PASQUAL VALLEY	7	1	1%
OLD MILKY WY	VIA RANCHO	DRIVEWAY	1	1	0%
OLD MILKY WY	DRIVEWAY	SAN PASQUAL VALLEY	1	1	0%
JULIAN	DRIVEWAY	SLAUGHTERHOUSE	1	1	0%
SR-78	UNKNOWN	SC 860	1	1	0%
TWIN PEAKS	zone connector	TED WILLIAMS	3	1	0%
TWIN PEAKS	TED WILLIAMS	MAPLEWOOD	3	1	0%
ESPOLA	SUMMERFIELD	AVENIDA FLORENCIA	2	1	0%
ESPOLA	VALLE VERDE	MARTINCOIT	2	1	0%
ESPOLA	BRIDLEWOOD	unknown	2	1	0%
SR-67	POWAY	IRON MOUNTAIN	1	1	0%
MONTEZUMA VALLEY	unknown	DRIVEWAY	0	1	0%
COMMUNITY	TWIN PEAKS	AUBREY	2	1	0%
TWIN PEAKS	WOODCREEK RD	COMMUNITY	3	1	0%
COMMUNITY	OLIVE GROVE	HILLEARY	2	1	0%
COMMUNITY	AUBREY	OLIVE GROVE	2	1	0%
I-8 WB	CORRIZO GORGE	SR-94	0	1	0%
RANCHO BERNARDO	VIA TAZON	WEST BERNARDO	3	1	0%
BERNARDO CENTER	RAMP	CLOUDCREST	3	1	0%
POMERADO	RAMP	HIGHLAND VALLEY	4	1	0%
POMERADO	HIGHLAND VALLEY	CLOUDESLY	3	1	0%
POMERADO	CLOUDESLY	ESCALA	3	1	0%
POMERADO	BERNARDO TRAILS	PASEO DEL VERANO NOR	3	1	0%
POMERADO	OAKS N	PASEO DEL VERANO	2	1	0%
BERNARDO HEIGHTS	CALLE NOBLEZA	AVNDA VENUSTO	2	1	0%
RANCHO BERNARDO	VIA DEL CAMPO	MATINAL	2	1	0%
JULIAN	SLAUGHTERHOUSE	DEER CANYON	1	1	0%
JULIAN	DEER CANYON	SC 964	1	1	0%
JULIAN	RANCHO SANTA TERESA	SUTHERLAND	1	1	0%
JULIAN	UNKNOWN	CASNER	1	1	0%
JULIAN	CASNER	OLD JULIAN	1	1	0%
JULIAN	RAMONA TRAILS	UNKNOWN	1	1	0%
PILE	PAMO	THOMSEN	1	1	0%
SR-78	CROSSWINDS	HAVERFORD	7	1	1%
SR-56 EB	RANCHO PENASQUITOS	I-15 SB	5	1	1%
VIA DE LA VALLE	zone connector	SAN ANDRES	1	1	0%
VIA DE LA VALLE	EL CAMINO REAL	EL CAMINO REAL	6	1	1%
SAN VICENTE	H	11TH	3	1	0%
SAN VICENTE	11TH	BARGER	3	1	0%
SAN VICENTE	BARGER	HANSON	2	1	0%
EL CAMINO REAL	unknown	SEA COUNTRY LN	5	1	1%
EL CAMINO REAL	DERBY DOWNS	HALF MILE	5	1	1%
RANCHO BERNARDO	CAM SAN BERNARDO	VIA DEL CAMPO	2	1	0%
SCRIPPS POWAY	SCRIPPS HIGHLAND	SCRIPPS SUMMIT	1	1	0%
MIRAMAR	CABOT	8606-NORTHGATE PLAZA	2	1	0%
MIRA MESA	CAMINO SANTA FE	SCHILLING/CAM ALVARE	3	1	0%
MIRA MESA	WESTONHILL	GREENFORD	3	1	0%
MIRA MESA	WESTMORE	RICKERT	3	1	0%
MIRAMAR	7590	EMPIRE	2	1	0%
MIRAMAR	EMPIRE	DOWDY	2	1	0%

NM	FXNM	TXNM	Q1	VMT1	PCT1
MIRAMAR	CLAYTON	BLACK MOUNTAIN	3	1	0%
POMERADO	WILLOW CREEK	UNKNOWN	1	1	0%
NORTH TORREY PINES	SCIENCE PARK NORTH	UNKNOWN	1	1	0%
HIGHLAND VALLEY	SALIDA DEL SOL	ARCHIE MOORE	1	1	0%
HIGHLAND VALLEY	SA 603	SKY VALLEY	1	1	0%
HIGHLAND VALLEY	SKY VALLEY	UNKNOWN	1	1	0%
HIGHLAND VALLEY	STARVATION MOUNTAIN	SA 603	1	1	0%
SR-67	SCRIPPS POWAY	SYCAMORE PARK	1	1	0%
SR-67	JOHNSON LAKE	POST HILL	1	1	0%
POWAY	RAMP	SABRE SPRINGS	1	1	0%
KEARNY VILLA	RAMP	AERO	1	1	0%
NORTH HARBOR	DRIVEWAY	LAUREL	2	1	0%
zone connector	zone 1081	MISSION	5	1	1%
zone connector	zone 908	MORNING VIEW	5	1	1%
zone connector	zone 1258	CITRACADO	3	1	0%
zone connector	zone 1326	BEAR VALLEY	4	1	0%
zone connector	zone 1257	AVNDA DEL DIABLO	3	1	0%
zone connector	zone 909	MISSION	2	1	0%
zone connector	zone 1205	SAN PASQUAL VALLEY	3	1	0%
zone connector	zone 1208	11TH	8	1	1%
zone connector	zone 1354	VIA RANCHO	7	1	1%
zone connector	zone 10	I-15 SB	7	1	1%
zone connector	zone 1181	HOWARD	10	1	1%
zone connector	zone 1828	WILDCAT CANYON	2	1	0%
zone connector	zone 362	VALLEY CENTER	2	1	0%
zone connector	zone 699	BORDEN	1	1	0%
zone connector	zone 832	RICHLAND	7	1	1%
zone connector	zone 1057	CITRACADO	4	1	0%
zone connector	zone 135	EAST GRADE	0	1	0%
zone connector	zone 195	COOL VALLEY	1	1	0%
zone connector	zone 1696	RANCHO CARMEL	1	1	0%
zone connector	zone 739	OAKWOOD GROVE	0	1	0%
zone connector	zone 811	COMET	8	1	1%
zone connector	zone 891	ROCK SPRINGS	4	1	0%
zone connector	zone 895	KNOLL	2	1	0%
zone connector	zone 935	VALPREDA	6	1	1%
zone connector	zone 963	W LA MOREE	1	1	0%
zone connector	zone 1008	BARHAM	2	1	0%
zone connector	zone 1036	DISCOVERY	6	1	1%
zone connector	zone 1123	INDUSTRIAL	4	1	0%
zone connector	zone 1163	VALLEY	8	1	1%
zone connector	zone 1163	AUTOPARK	7	1	1%
zone connector	zone 1165	TULIP	5	1	1%
zone connector	zone 1178	COUNTRY CLUB	5	1	1%
zone connector	zone 1190	AUTOPARK	18	1	2%
zone connector	zone 1199	HARMONY GROVE	11	1	1%
zone connector	zone 1229	HALE	5	1	1%
zone connector	zone 1273	COUNTRY CLUB	1	1	0%
zone connector	zone 2079	RAMP	0	1	0%
CARMEL MTN	UNKNOWN	RANCHO CARMEL	0	0	0%
GRAND	unknown	02ND	9	0	1%
13TH	CENTRE CITY	ORANGE	6	0	1%

NM	FXNM	TXNM	Q1	VMT1	PCT1
13TH	S PINE	CENTRE CITY	11	0	1%
13TH	UNKNOWN	REDWOOD	9	0	1%
13TH	ORANGE	ESCONDIDO	5	0	1%
MISSION	ASH	ROOSEVELT	9	0	1%
ESCONDIDO	unknown	FELICITA	5	0	1%
GRAND	SPRUCE	unknown	9	0	1%
BEAR VALLEY	ENCINO	SUNSET	0	0	0%
SAN PASQUAL VALLEY	OLD MILKY WY	YSABEL CREEK	7	0	1%
			26344	6400	
			18.007	4.375	

Total Model VMT	**6,400**
100% ZC Trips	**908**
AVERAGE TRIP LENGTH	**7.05**
Total Project-Specific VMT	**26,691**
100% Project-Specific ADT	**3,786**

N:\2152\Modeling\VMT\VMT Calcs\VMT

Appendix I

QUALITATIVE ASSESSMENT FOR VALIANO PROJECT

QUALITATIVE ASSESSMENT FOR VALIANO PROJECT

While the service person efficiency analysis herein provides a valuable and adequate quantitative threshold backed by substantial evidence for both a 2020 GHG analysis and post-2020 GHG analysis, CEQA Guidelines 15064.4(a) permits both quantitative and qualitative analysis. While not required, this Appendix provides a supplemental analysis that does not reduce any of the mitigation measures already provided in the quantitative analysis. The data point for this qualitative threshold is the substantial evidence CARB relied upon in its First Update to the Scoping Plan to conclude that California was on track to meet the 2030 and 2050 state GHG targets and analyzes in a qualitative manner whether the Project interferes with the programs CARB identified in the First Update as providing a means for the state to achieve these long-term state targets. The analysis notes that while local government's land use decisions play a role in assisting the state in meeting the long-term GHG emissions targets, ultimately AB 32 and SB 32 require that the State meet the long-term GHG emissions targets, not an individual project. Therefore, this analysis assesses whether or not a project is overall consistent with, meaning not interfering with, programs CARB identified in its First Update as capable of assisting the state in meeting its long-term GHG emissions targets.[1]

Table I-1 includes the programs identified in a CARB-commissioned expert study entitled "*Estimating Policy-Driven Greenhouse Gas Emissions Trajectories in California: The California Greenhouse Gas Inventory Spreadsheet (GHGIS) Model* (Greenblat 2013)." Based on this study, the GHG experts at CARB noted in the First Update to the Scoping Plan that "California is on track to meet the near-term 2020 greenhouse gas limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32" and "California….could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80 percent below 1990 levels by 2050." CARB's expert opinion is that the State is on a trajectory to meet the 2020, 2030, and 2050 GHG reduction targets set forth in AB 32, Executive Order B-30-15 and Executive Order S-3-05. As demonstrated in Table I-1, the Project is overall consistent with the programs CARB's experts have identified for keeping the state on track to meet its GHG emissions targets.

[1] The legal principals of qualitative consistency are founded in a long line of cases where lead agencies qualitatively evaluate a project's consistency with land use plans. Those principles include (1) that a project must be compatible with a plan overall, not strict conformity and (2) a project should further one or more policies and not obstruct other policies in the plan. Indeed, a leading CEQA legal treatise notes there are several approaches to analyzing the significance of a project's GHG emissions and, "[u]nder one approach, the lead agency makes a determination similar to that used in evaluating whether a project is consistent with a local general plan, and the agency can determine that the project is consistent with AB 32 if the project furthers one or more policies or goals of AB 32 and does not obstruct implementation of AB 32 policies." See *Friends of Lagoon Valley v City of Vacaville* (2007) 154 Cal. App. 4th 807, 815 (upholding overall consistency finding even though project deviated from some particular planning provisions); Office of Planning and Research (OPR), State of California General Plan Guidelines (2003); *City of Irvine v. Irvine Citizens Against Overdevelopment* (1994) 25 Cal. App. 4th 868,879.); Practice Under the California Environmental Quality Act (2d ed Cal CEB) at §20.86B.

Table I-1 PROJECT CONSISTENCY WITH POTENTIAL POST-2020 PROGRAMS	
Potential Post-2020 Program for Reducing GHG Emissions	**Project Consistency**
Fuels • AB 2076 and AB 1007: 26% petroleum displacement (via biofuels) by 2022, and 30% by 2030 (applied to both gasoline and diesel)	*Consistent*. Project-related vehicles would purchase fuels from local suppliers that would meet the requirements of state fuel specifications as the state program is implemented. The project would not interfere with implementation of this program.
HDV Sector • MHD and HHD vehicle hybridization: 0.5 MT CO_2e reduction in 2020 achieved with 1.3% increase in fuel efficiency of conventional engines (rather than introducing hybrid market shares) • System-wide HDV efficiency: 3.5 MT CO_2e reduction in 2020 achieved with 9.5% decrease in VMT across all vehicle classes	*Consistent*. Project-related medium- and heavy-vehicles would be subject to statewide efficiency measures targeted at these vehicle classes. Phase-out of older vehicles and phase-in of new vehicles that meet the state's requirements for hybridization would result in lower GHG emissions from the fleet. The project would not interfere with implementation of this program.
Other Transportation Sector • High-speed rail: 1 MT CO_2e reduction in 2020 achieved by 75% increase in rail energy use (as electricity) with simultaneous 18% decrease in in-state aviation energy use	*Consistent*. The project is not part of the high-speed rail system. The project would not interfere with implementation of this program.

Stationary Sector
• Baseline energy use: Used IEPR base case plus Navigant PGT net energy mid-market savings from 2015-2024 (Swamy 2013), with extrapolations to 2050
• AB 758/Energy efficiency strategic plan (CPUC 2008)
  o Residential new construction: 23% more efficient than 2010 baseline in 2011, 40% in 2015, 53% in 2020 (applied to both electricity and NG).
  o Residential retrofits: 20% more efficient than 2010 baseline in 2015, 40% in 2020 (applied to both electricity and NG).
  o Commercial new construction: 60% more efficient than 2010 baseline in 2020 (applied to both electricity and NG; used averages of 2020 and 2030 values in 2025: 36% for electricity, 37% for NG).
  o Commercial retrofits: No improvement over baseline.
	Consistent. The Project proposes implementing energy efficiency features that would meet 2016 Title 24 standards, which is 46 percent more efficient than the 2008 Title 24 requirements. The Project also proposes to supply 100 percent of residential electricity needs through renewable sources per planning area (Neighborhoods 1-5) thereby achieving the net zero energy goal. The project would not interfere with implementation of this program.

Table I-1 PROJECT CONSISTENCY WITH POTENTIAL POST-2020 PROGRAMS	
Potential Post-2020 Program for Reducing GHG Emissions	**Project Consistency**
• Zero Net Energy (ZNE): Sum of electricity and NG primary energy consumed by buildings is offset by distributed solar PV: o Residential new construction: 100% of buildings are ZNE by 2020 o Residential retrofits: No ZNE buildings o Commercial new construction: 100% of buildings are ZNE by 2030 o Commercial retrofits: 50% of buildings are ZNE by 2030 (continued trend to 100% of buildings in 2050)	
Energy Sector • Imports: ramped down to 0% by 2025; otherwise fossil generation goes negative before 2020 • CHP: AB 32 Scoping Plan for CHP (increase by 30,000 GWh in 2020; total capacity of 15.1 GW) and Governor's CHP goal (6.5 GW new CHP by 2030; total capacity of 15.3 GW): Because capacity factor of CHP was revised significantly downward in Scenario 1, there was now enough electricity demand remaining after other generation types were accounted for meet these goals. Note had to reduce CHP capacity slightly to 15.1 GW by 2040 to prevent remaining fossil generation from falling below zero. • 12 GW of renewable distributed generation by 2020 (25,000 GWh), all in form of PV. This counted toward ZNE goals, which only overtook this total in 2030. • 8 GW of new utility-scale renewables by 2020: Part of meeting RPS target • Local targets for renewables >33%. Increased state RPS target from 33% to 37% to simulate meeting these commitments • 1,325 MW energy storage by 2020 (investor-owned utility target): Scaled up to 1,900 MW to represent statewide target (IOUs are ~70% of state electricity generation), achieved by building storage equal to 0.55% of gross demand assuming an arbitrary 10% capacity factor (~1,600 GWh/yr). • Nuclear: Diablo Canyon relicensed through 2045, then offline • CCS: One 300 MW IGCC/CCS coal plant online in 2020 (based on HECA plant in Bakersfield, CA). Methodology for implementing this in model was changed, so capacity could now be specified precisely in target years.	*Consistent*. The Project proposes to supply 100 percent of residential electricity needs through renewable sources per planning area (Neighborhoods 1-5). The project would not interfere with implementation of this program.

Table I-1 PROJECT CONSISTENCY WITH POTENTIAL POST-2020 PROGRAMS	
Potential Post-2020 Program for Reducing GHG Emissions	**Project Consistency**
• Natural gas: After storage balance of load-following generation (~3.5%) was supplied by SC NG, and remaining fossil generation was supplied by CC NG: ~16% in 2010, tapering to almost zero by 2020, then varying up to 7% through 2050.	
Water • 20 by 20: 20% water reduction in residential and commercial sectors by 2020 • Water use efficiency, recycling, pumping and treatment efficiency, and urban runoff re-use: additional 3.9 MT CO_2e achieved through 2020 water use savings of 32.5% relative to baseline in residential and commercial sectors.	*Consistent.* The state 20 by 20 program is an initiative to reduce statewide per capita reduction in urban water demand by 20 percent from a 2005 baseline by the year 2020. According to the 20x20 Water Conservation Plan (February 2010) the state is working to reduce per capita urban water consumption from 192 GPCD to 154 GPCD by the year 2020. Among the measures the plan uses to achieve these reductions is enactment of building standards for more water efficient plumbing fixtures. The project would install low-flow plumbing fixtures and would reduce water consumption in compliance with Title 24 Part 11. In addition, the plan proposed to enact a model water efficiency landscape ordinance local governments could adopt and implement. The County of San Diego adopted the model water efficiency landscape ordinance and the project is required to comply with it by law. Accordingly, the project does not interfere with the state's ability to implement its 20x20 Water Conservation Plan. In addition, through water use efficiency, recycling, pumping, and treatment efficiency, and urban runoff re-use, the state plans to achieve GHG reductions through a water use savings of 32.5% relative to baseline in residential

Table I-1 PROJECT CONSISTENCY WITH POTENTIAL POST-2020 PROGRAMS	
Potential Post-2020 Program for Reducing GHG Emissions	**Project Consistency**
	and commercial sectors as calculated by the CEC based on 2008 Title 24 requirements. The project does not interfere with the state's ability to achieve this efficiency reduction because it will meet the 2016 Title 24 building energy efficiency standards in effect at the time of construction.
Waste • AB 341: 75% waste diversion in 2020 reduced direct and indirect emissions by 4.5 MT CO_2e (consistent with expected 20-30 MT CO_2e reduction in 2020, where 80% of emissions are outside of California) • Zero net emissions by 2035: Achieved by forcing biogenic component of landfills to 100%	*Consistent*. As detailed in Section 5.3.5, the project would be built in compliance with AB 341. The project is not a landfill project. Therefore it would not interfere with state implementation of the landfill biogenic program.
HGWP Gases • HFC phase-out: 50% of HFCs eliminated by 2035, 100% by 2050 • Foam recovery and destruction, fire suppressants, and residential refrigerator retirement: estimated 0.5 MT CO_2e reduction in 2020, implemented by reducing HFC usage 2.5% in 2020 • Additional reductions in mobile sources, leak tests, refrigerant recovery and federal ban: reduction unknown; assume additional 0.5 MT CO_2e in 2020, implemented by reducing HFC usage an additional 2.5% in 2020 (so total reduction of 5%)	*Consistent.* The project does not utilize HGWP gases. The project would utilize energy-efficient appliances that would meet the state requirements for reducing HFC usage. The project would therefore be consistent with these programs.
Cap-and-Trade • Local reductions beyond state/federal activities: For 90 cities reviewed (Cal Poly study), 44% of actions in CAPs were incremental to state and federal rules, accounting for 8.2 MT CO_2e reductions in 2020. Because activities are so diffuse throughout economy, we chose to represent these reductions via emission offset in the *Cap and Trade* sector.	*Consistent*. The project is not part of the Cap-an-Trade program. The project would not interfere with implementation of this program.

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