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 a 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 ton (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%)

Table 2 (cont.) 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]**
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 (UNFCCC)

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 United States 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

In the past, the USEPA has not regulated GHGs under the Clean Air Act (CAA). The U.S. Supreme Court, however, ruled on April 2, 2007 (in *Massachusetts v. U.S. Environmental Protection Agency)* that CO_2 is an air pollutant, as defined under the CAA, and that the USEPA has the authority to regulate GHG emissions. After a thorough examination of the scientific evidence and careful consideration of public comments, the USEPA announced on December 7, 2009 that GHGs threaten the public health and welfare of the American people (with the associated findings summarized below).

> *Endangerment Finding*: The USEPA Administrator finds that the current and projected concentrations of the six key well-mixed GHGs – CO_2, CH_4, N_2O, HFC, PFC, and SF_6 – in the atmosphere threaten the public health and welfare of current and future generations.
>
> *Cause or Contribute Finding*: The USEPA Administrator finds that the combined emissions of these well-mixed GHGs from motor vehicles and motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

The endangerment findings do not themselves impose any requirements on industry or other entities. This action was a prerequisite to the final USEPA's GHG emissions standards for light duty vehicles, which are jointly implemented by USEPA and the Department of Transportation's National Highway Safety Administration on April 1, 2010.

3.2.1 Mandatory Reporting Rule of GHGs

On January 1, 2010, the USEPA started, for the first time, requiring large emitters of heat-trapping emissions to begin collecting GHG data under a new reporting system. This new program covers approximately 85 percent of the nation's GHG emissions and applies to roughly 10,000 facilities. Fossil fuel and industrial GHG suppliers, motor vehicle and engine manufacturers, and facilities that emit 25,000 metric tons (MT) or more of CO_2 equivalent per year will be required to report GHG emissions data to the USEPA annually. This reporting threshold is equivalent to the annual GHG emissions from approximately 4,600 passenger vehicles. Vehicle and engine manufacturers outside of the light-duty sector began phasing in GHG reporting with vehicle/engine model year 2011.

3.2.2 Corporate Average Fuel Economy Standards

The federal Corporate Average Fuel Economy (CAFE) standard determines the fuel efficiency of certain vehicle classes in the United States. First enacted by Congress in 1975, CAFE's purpose is to reduce energy consumption by increasing the fuel economy of cars and light trucks. National Highway Transportation Safety Administration (NHTSA) has set standards to increase CAFE levels rapidly over the next several years, which will improve the fuel consumption rates

in motor vehicles across the United States. In 2007, as part of the Energy and Security Act of 2007, CAFE standards were increased for new light-duty vehicles to 35 miles per gallon by 2020. In May 2009, President Obama announced plans to increase CAFE standards to require light-duty vehicles to meet an average fuel economy of 35.5 miles per gallons by 2016. On May 21, 2010, following the direction set by President Obama, NHTSA and USEPA have issued joint Final Rules for CAFE and GHG emissions regulations for model years 2017 and beyond.

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 Clean Air Act (CAA or Act) 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 <u>California Greenhouse Gas Regulations</u>

3.3.1 California Code of Regulations, Title 24, Part 6

California Code of Regulations 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.

The Title 24 standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2013 update to the 2008 standards went into effect in July 2014.

3.3.2 California Code of Regulations, Title 24, Part 11

California Code of Regulations, Title 24, Part 11, outlines the CALGreen code. CALGreen has approximately 52 mandatory measures and additional measures designed to allow local cities to adopt codes that go beyond the state mandatory provisions. Some key mandatory measures for commercial buildings include specified parking for clean air vehicles, a 20 percent reduction of potable water use within buildings, a 50 percent construction waste diversion from landfills, use of building finish materials that emit low VOCs, and building commissioning. Other key components include increased reduction in energy usage by 15 percent and increased reduction

in potable water use. The CALGreen code includes the critical issue of compliance verification by utilizing the existing building code enforcement infrastructure, and allows local public agencies to incorporate the CALGreen code provisions into their construction field inspections. The mandatory CALGreen measures are inspected and verified by local building departments. A 2013 update to the CalGreen code was adopted in 2013 and went into effect in July 2014.

3.3.3 Senate Bill 1771

Senate Bill (SB) 1771 (Sher) was enacted on September 30, 2000, and requires the Secretary of the Resources Agency to establish a nonprofit public benefit corporation, to be known as the "California Climate Action Registry," for the purpose of administering a voluntary GHG emission registry. The CEC is required to develop metrics for use by the Registry and to update the State's inventory of GHG emissions by January 1, 2002, and every five years thereafter.

3.3.4 Executive Order S-7-04

This EO, signed by Governor Schwarzenegger on April 20, 2004, designated California's 21 interstate freeways as the "California Hydrogen Highway Network," and directed the California Environmental Protection Agency (CalEPA) and all other relevant state agencies to "…plan and build a network of hydrogen fueling stations along these roadways and in urban centers that they connect, so that by 2010, every Californian will have access to hydrogen fuel, with a significant and increasing percentage from clean, renewable sources."

The EO also directed the CalEPA, in concert with the State Legislature and in consultation with the CEC and other relevant state and local agencies, to develop the California Hydrogen Economy Blueprint Plan by January 1, 2005. The Plan is to be updated biannually, with recommendations to the Governor and State Legislature to include the following:

> Promoting environmental benefits (including global climate change) and economic development opportunities resulting from increased utilization of hydrogen for stationary and mobile applications; policy strategies to ensure hydrogen generation results in the lowest possible emissions of GHGs and other air pollutants.

3.3.5 Executive Order S-3-05

EO S-3-05, signed by Governor Schwarzenegger on June 1, 2005, calls for a reduction in GHG emissions to year 1990 levels by the year 2020, and for an 80 percent reduction in GHG emissions below 1990 levels by the year 2050.

EO S-3-05 also calls for the CalEPA to prepare biennial science reports on the potential impact of continued global warming on certain sectors of the California economy. The first of these reports, "Scenarios of Climate Change in California: An Overview," was published in February 2006. The 2006 report used a range of emissions scenarios developed by the IPCC to project a series of potential warming ranges (i.e., temperature increases) that may occur in California during the 21st century. Specifically, these include a lower warming range

(3.0-5.5°F); medium warming range (5.5-8.0°F); and higher warming range (8.0-10.5°F). The report then presents analyses of future climate in California under each warming range.

As noted above, each emissions scenario would result in substantial temperature increases for California. According to the report, these substantial temperature increases would result in a variety of impacts to the people, economy, and environment of California in association with a projected increase in extreme conditions. While the severity of these impacts would depend upon actual future emissions of GHGs and associated warming, identified potential impacts from global warming in California include, but are not limited to, public health, biology, rising sea levels, hydrology and water quality, and water supply.

3.3.6 Assembly Bill 32 – Global Warming Solutions Act of 2006

The California Global Warming Solutions Act of 2006, widely known as AB 32, requires the CARB to 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 sets a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

The heart of the bill is the requirement that statewide GHG emissions must be reduced to 1990 levels by the year 2020; this goal was identified in December 2007, and the reporting and verification requirements concerning GHG emissions were adopted on January 1, 2008. California needs to reduce GHG emissions by approximately 28.3 percent below the BAU predictions to achieve this goal. The bill requires the CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions. On January 1, 2011, specific GHG emission limits and reduction measures in line with AB 32 were adopted; these became enforceable on January 1, 2012.

As of October 31, 2011, 18 of 30 CARB regulations had been approved, including nine discrete early actions, as required by AB 32. The current estimate for the necessary GHG emissions reductions to attain the goals of AB 32 (i.e., 1990 levels by 2020) is 174 MMT CO_2e. It is estimated that nine proposed discrete early actions identified by CARB will provide approximately 16 MMT CO_2e of GHG reductions while the other early actions will provide approximately 26 MMT CO_2e of GHG reductions. It also is anticipated that an additional 30 MMT CO_2e in reductions will be achieved from the passage of anti-idling measures and AB 1493 (described below). The remaining 102 MMTCO_2e are expected to be achieved through CARB's Scoping Plan and other emission reduction efforts by members of the CAT.

In March 2011, a San Francisco Superior Court enjoined the implementation of CARB's Scoping Plan, finding the alternatives analysis and public review process violated both CEQA and CARB's certified regulatory program (*Association of Irritated Residents, et al v. California Air Resources Board,* Case No. CPF-09-509562, March 18, 2011). In response to this litigation, the CARB adopted the new CEQA document (*Final Supplement to the AB32 Scoping Plan Functional Equivalent Document*) on August 24, 2011. CARB staff re-evaluated the baseline in light of the economic downturn and updated the projected 2020 emissions to 545 MMT CO_2e. Two reduction measures (Pavley I and the Renewables Portfolio Standard (RPS) [12%–20%])

not previously included in the 2008 Scoping Plan baseline were incorporated into the updated baseline, further reducing the 2020 Statewide emissions projection to 507 MMT CO_2e. The updated forecast of 507 MMT CO_2e is referred to as the AB 32 2020 baseline. Reduction of an estimated 80 MMT CO_2e is necessary to reduce Statewide emissions to the AB 32 target of 427 MMT CO_2e by 2020 (CARB 2011).

3.3.7 Assembly Bill 1493 – Vehicular Emissions of Greenhouse Gases

In a response to the transportation sector accounting for more than half of California's CO_2 emissions, AB 1493 (Pavley) was enacted on July 22, 2002. AB 1493 (also referred to as Pavley or the California Light-Duty Vehicle Greenhouse Gas Standards) requires the CARB to set statewide GHG emission standards for passenger vehicles and light-duty trucks (and other vehicles determined to be vehicles whose primary use is noncommercial personal transportation) manufactured in model year 2009 and all subsequent model years. These standards were adopted in September 2004, and considered cost effectiveness, technological feasibility, and economic impacts. When fully phased in, the near-term (years 2009 to 2012) standards would reduce GHG emissions by approximately 22 percent compared with the emissions from the year 2002 fleet, while the mid-term (years 2013 to 2016) standards would result in a reduction of approximately 30 percent. Some currently used technologies that achieve GHG reductions include small engines with superchargers, continuously variable transmissions, and hybrid electric drives. To set its own GHG emissions limits on motor vehicles, California required a waiver from the USEPA, and this waiver was issued in June 2009. With this action, it was expected in 2008 that the new regulations (Pavley I and II) would reduce GHG emissions from California passenger vehicles by about 18 percent statewide.

3.3.8 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.

3.3.9 Senate Bill 1368

In 2006, the California Legislature passed SB 1368, which requires the Public Utilities Commission (PUC) to develop and adopt a "GHGs emission performance standard" by February 1, 2007 for the private electric utilities under its regulation. On November 14, 2011, the Natural Resources Defense Council (NRDC) and Sierra Club jointly filed a Petition requesting the CEC initiate a rulemaking proceeding to ensure the current practices of California publicly owned utilities (POUs) meet the requirements of Senate Bill 1368 and California's Emission Performance Standard. On January 12, 2012, the CEC adopted the Emission Performance Standard. These standards apply to all long-term financial commitments (five years

or longer) entered into by electric utilities and the emissions must be limited to 1,100 pounds of CO_2 per megawatt-hour of electricity delivered (California SB 2006).

3.3.10 Senate Bill 1505

Largely in response to EO S-7-04, SB 1505 (Lowenthal) requires the CARB to adopt regulations by July 1, 2008 that ensure the production and use of hydrogen for transportation purposes contributes to the reduction of GHG emissions, criteria air pollutants, and toxic air contaminants. SB 1505 was passed by the legislature and signed by the governor on September 30, 2006.

3.3.11 Executive Order S-01-07

This EO was signed by Governor Schwarzenegger on January 18, 2007 and directs that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and directs CARB to determine whether a LCFS can be adopted as a discrete early action measure pursuant to AB 32. The CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in 2010. It was expected to result in a reduction of 15 MMT CO_2e by 2020 (based on the original 2008 Scoping Plan estimates). On December 29, 2011, District Judge Lawrence O'Neill in the Eastern District of California issued a preliminary injunction blocking CARB from implementing LCFS for the remainder of the *Rocky Mountain Farmers Union* litigation. Plaintiffs argued that the LCFS is unconstitutional because it violates the interstate commerce clause, which was intended to stop states from introducing laws that would discriminate against businesses located in other states.

In January 2012, however, the CARB appealed that decision to the Ninth Circuit Court of Appeals (Ninth Circuit), and then moved to stay the injunction pending resolution of the appeal. On April 23, 2012, the Ninth Circuit granted the CARB's motion for a stay of the injunction while it continues to consider CARB's appeal of the lower court's decision. On September 18, 2013, the Ninth Circuit reversed the District Court's opinion and rejected arguments that implementing LCFS violates the interstate commerce clause. Therefore, the LCFS enforcement injunction has been removed, and CARB is 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

SB 375 was signed and passed into law on September 30, 2008 to enhance the CARB's ability to reach AB 32 goals. Specifically, SB 375 requires CARB to set regional targets for the purpose of reducing GHG emissions from passenger vehicles for years 2020 and 2035. If regions develop integrated land use, housing, and transportation plans that meet the SB 375 targets, new projects in these regions can be relieved of certain CEQA review requirements. The targets apply to the regions in the state covered by 18 Metropolitan Planning Organizations (MPOs).

Per SB 375, CARB appointed a Regional Targets Advisory Committee (RTAC) on January 23, 2009 to provide recommendations and methodologies to be used in the CARB's target setting process. The RTAC provided its recommendations in a report to the CARB on September 29, 2009. The CARB released its draft targets on June 30, 2010, and adopted its final targets on September 23, 2010. For the San Diego area, CARB and the San Diego Association of Governments (SANDAG) agreed to adopt 7 percent and 13 percent in per capita GHG emission reductions from passenger vehicles by the years 2020 and 2035, respectively. If MPOs had not met the GHG reduction targets, transportation projects would not be eligible for funding programmed after January 1, 2012.

On October 28, 2011, the SANDAG Board of Directors approved the 2050 Regional Transportation Plan and its Sustainable Communities Strategy (2050 RTP/SCS) for the San Diego region, becoming the first large region in California to prepare an RTP under California climate change legislation (SANDAG 2014).

On December 4, 2012, Superior Court ruled that SANDAG violated state law by failing to fully account for, and take steps to reduce, climate change in its environmental review of the region's long-term transportation plan. At the time of this writing, San Diego Forward unites two of SANDAG's major planning efforts into one: the next update of the RTP/SCS and an update of the Regional Comprehensive Plan (RCP) that was adopted in 2004. San Diego Forward: The Regional Plan is scheduled to be adopted in July 2015 (SANDAG 2014).

3.3.14 Executive Order S-13-08

EO S-13-08, signed by Governor Schwarzenegger on November 14, 2008, enhances the state's management of climate impacts from sea level rise, increased temperatures, shifting precipitation and extreme weather events. One key benefit of EO S-13-08 is that it has facilitated California's first comprehensive climate adaptation strategy. This strategy will improve coordination within state government so that better planning can more effectively address climate impacts to human health, the environment, the state's water supply, and the economy. Another benefit of EO S-13-08 includes providing consistency and clarity to state agencies on how to address sea

level rise in current planning efforts, thus reducing time and resources unnecessarily spent on developing different policies using different scientific information.

3.4 California Greenhouse Gas Programs and Plans

3.4.1 California Energy Commission: New Solar Homes Partnership

The New Solar Homes Partnership (NSHP) is a component of the California Solar Initiative, and has a goal to produce 400 megawatts of solar electricity on approximately 160,000 homes by the year 2017. To qualify for the program, a new home must achieve energy-efficiency levels greater than the requirements of the year 2005 Building Title 24 Standards. The builder can choose to comply with either of two tiers of energy-efficiency measures: Tier I, which requires a 15-percent reduction from Title 24 Standards; or Tier II, which requires a 35-percent reduction overall and 40-percent reduction in the building's space cooling (air conditioning) energy compared to Title 24 (CEC 2008). In addition, all appliances must have an Energy Star rating, which indicates that the appliance is consistent with the international standard for energy-efficient consumer products.

3.4.2 California Air Resources Board: Interim Significance Thresholds

In October 2008, the CARB released draft interim guidance on significance thresholds for industrial, commercial, and residential projects (CARB 2008a). The draft proposal for residential and commercial projects states that a project would not be significant if it complies with a previously approved plan that addresses GHG emissions or meets an energy use performance standard defined as CEC's Tier II Energy Efficiency goal (specified as 35 percent above Title 24 requirements). However, CARB did not "define" the performance standards for water, waste, and transportation nor "develop" threshold for GHG emissions in tons per year in the interim guidance. As such, CARB did not establish a threshold of significance. As of January 22, 2009, CARB has halted all work efforts on the draft *GHG Threshold of Significance under CEQA.*

3.4.3 California Air Resources Board: Scoping Plan

On December 11, 2008, CARB adopted a 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. The measures in the Scoping Plan approved by the Board are in place, with further implementation details and regulations to be developed, followed by the rulemaking process to meet the 2012 deadline. Measures applicable to development projects include the following:

- Maximum energy-efficiency building and appliance standards, including more stringent building codes and appliance efficiency standards, and solar water heating;

- Use of renewable sources for electricity generation, such as photovoltaic solar associated with the Million Solar Roofs program;

- Regional transportation targets, including the integration of development patterns and the transportation network to reduce vehicle travel, as identified in SB 375; and

- Green Building strategy, including siting near transit or mixed-use areas; zero-net-energy buildings; "beyond-code" building efficiency requirements; and the use of the CEC's Tier II Energy Efficiency goal.

Relative to transportation, the Scoping Plan includes nine measures or recommended actions. One of these is measure T-3, Regional Transportation-Related Greenhouse Gas Targets, which relies on SB 375 implementation to reduce GHG emissions from passenger vehicles through reducing Vehicle Miles Traveled (VMT). The other measures are related to vehicle GHG emissions, fuel, and efficiency measures and would be implemented statewide rather than on a project-by-project basis.

In order to assess the scope of the reductions needed to return to 1990 emissions levels, CARB first estimated 2020 business as usual (BAU) GHG emissions. These are the GHG emissions that would be expected to occur in the absence of any state GHG reduction measures. In 2008, after estimating that statewide 2020 BAU GHG emissions would be 596 MT, CARB developed a Scoping Plan that identified measures to reduce BAU emissions by approximately 174 MT (an approximate 29 percent reduction) by 2020. As indicated in Table 4, the majority of reductions are directed at the sectors with the largest GHG emissions contributions (transportation and electricity generation) and involve statutory mandates affecting vehicle or fuel manufacture, public transit, and public utilities.

Table 4
2008 CARB SCOPING PLAN RECOMMENDED GHG REDUCTION MEASURES

Recommended Reduction Measures	Reductions Counted Towards 2020 Target in MMT CO_2e (% total)[2]
California Light-Duty Vehicle Greenhouse Gas Standards • Implement Pavley I Standards [4] • Develop Pavley II light-duty vehicle standards	31.7 (18.22%)
Energy Efficiency • Building/appliance efficiency, new programs, etc. • Increase CHP generation by 30,000 GWh • Solar Water Heating (AB 1470 goal)	26.3 (15.11%)
Renewables Portfolio Standard (33% by 2020) [4]	21.3 (12.24%)
Low Carbon Fuel Standard	15 (8.62%)
Regional Transportation-Related GHG Targets[1]	5 (2.87%)
Vehicle Efficiency Measures	4.5 (2.59%)
Goods Movement • Ship Electrification at Ports • System-Wide Efficiency Improvements	3.7 (2.13%)
Million Solar Roofs	2.1 (1.21%)

Table 4 (cont.) 2008 CARB SCOPING PLAN RECOMMENDED GHG REDUCTION MEASURES	
Recommended Reduction Measures	**Reductions Counted Towards 2020 Target in MMT CO_2e (% total)[2]**
Medium/Heavy-Duty Trucks • Heavy-Duty Vehicle Greenhouse Gas Emissions Reduction (Aerodynamic Efficiency) • Medium- and Heavy-Duty Vehicle Hybridization	1.4 (0.80%)
High Speed Rail	1.0 (<1.0%)
Industrial Measures (for sources covered under cap and trade program) • Refinery Measures • Energy Efficiency and Co-Benefits Audits	0.3 (<0.5%)
Additional Reductions Necessary to Achieve the Cap Industrial Measures (for sources not covered under cap and trade program)	34.4 (20%) 1.1 (<1%)
• Oil and Gas Extraction and Transmission	
High Global Warming Potential Gas Measures	20.2 (12%)
Sustainable Forests	5.0 (3%)
Recycling and Waste (landfill methane capture)	1.0 (0.6%)
TOTAL ESTIMATED REDUCTIONS COUNTED TOWARDS 2020 TARGET [3]	**174**
State Government Operations	1-2%
Local Government Operations	TBD
Green Building	26 (14.94%)
Recycling and Waste	9 (5.17%)
Water Sector Measures	4.8 (2.76%)
Methane Capture at Large Dairies	1.0 (<1%)

Source: CARB 2008b.

1. This number represents an estimate of what may be achieved from local land use changes. It is not the SB 375 regional target. CARB will establish regional targets for each MPO following input of the Regional Targets Advisory Committee and a public stakeholders consultation process per SB 375.
2. Percentages are relative to the total of 174 MMT CO_2e and may not total 100 due to rounding.
3. The total reduction for the recommended measures slightly exceeds the 169 MMT CO_2e of reductions estimated in CARB's BAU 2020 Emissions Forecast of 596 MMT CO_2e made in 2008. This is the net effect of adding several measures and adjusting the emissions reduction estimates for some other measures.
4. CARB's 2010 revised BAU 2020 projections of 507 MMT CO_2e, based on the economic downturn and incorporation of Pavley I and 20% RPS, indicate the total reduction for the recommended measures is now 80 MMT CO_2e.

In August 2011, CARB revised its 2020 BAU projections to account for the economic downturn and other factors in their *Supplement to the AB 32 Scoping Plan Functional Equivalent Document* (CARB 2011). As previously mentioned in Section 3.3.7, CARB's revised estimate calculated that BAU 2020 emissions would be approximately 507 MMT CO_2e per year. Thus, in order to reach the 1990 emissions level of 427 MMTCO_2e, an 80 MMT CO_2e (16 percent) reduction was determined to be needed by 2020 (CARB 2011).

It was expected that the new regulations (Pavley I) would reduce GHG emissions from California passenger vehicles by about 31.7 MMT CO_2e (or 18 percent) counted toward the total

statewide reduction target (CARB 2008) (see Table 4). However, the revised 2011 projections estimate that Pavley I will reduce GHG emissions from passenger vehicles by about 29.9 MMT CO_2e (or 17 percent), for 37 percent of the total 80 MMT CO_2e reduction target.

CARB has adopted a second, more stringent, phase of the Pavley regulations, termed "Pavley II" [now known as "Low Emission Vehicle (LEV) III"], that covers model years 2017 to 2025. Pavley II was estimated in 2008 to add an additional 4.0 MMT CO_2e for 2 percent of the then-estimated 174 MMT CO_2e reduction total. The revised 2010 projections estimate that Pavley II will reduce GHG emissions from passenger vehicles by 3.8 MMT CO_2e, for 5 percent of the total 80 MMT CO_2e reduction target (per CARB's 2010 revised projections). These reductions are to come from improved vehicle technologies such as small engines with superchargers, continuously variable transmissions, and hybrid electric drives.

An 18 percent reduction in the intensity of transportation fuels is expected to equate to a reduction of 16.5 MMT CO_2e in 2020 (based on the original 2008 Scoping Plan estimates). However, in order to account for possible overlap of benefits between LCFS and the Pavley GHG standards, CARB has discounted the contribution of LCFS to 15 MMT CO_2e (CARB 2008).

The First Update to the Scoping Plan was approved by the Board on May 22, 2014, and builds upon the initial Scoping Plan with new strategies and recommendations (CARB 2014b). The First Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The First Update defines ARB's climate change priorities for the next five years, and also sets the groundwork to reach long-term goals set forth in Executive Orders S-3-05 and B-16-2012. The Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the initial Scoping Plan. To determine the amount of GHG emission reductions needed to reduce to 1990 emissions, CARB developed a forecast of 2020 emissions in a business-as-usual (BAU) scenario, 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 subtracts the estimated reductions from adopted and anticipated measures in 2020 to determine whether the 2020 limit is within reach. The 2014 Update to the Scoping Plan identifies a the 2020 BAU scenario as 509 MMT of CO_2e and the 1990 emissions limit as 431 MMT CO_2e; therefore, a reduction of 78 MMT CO_2e is needed to achieve 1990 emissions levels. The Update to the Scoping Plan also evaluates how to align the State's "longer-term" GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use.

3.5 Local Policies and Plans: County of San Diego

3.5.1 County of San Diego General Plan

The County 2011 General Plan 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 resulted in an implementation plan related to the reduction of GHGs, which includes the following actions:

- Prepare a climate change action plan based on this inventory and emissions reduction targets for GHG emissions from all sources (adopted June 2012);

- Develop regulations and procedures to encourage the design and construction of new buildings in accordance with "green building" programs; and

- Develop regulations that encourage the use of energy recovery, as well as photovoltaic and wind energy in appropriate areas.

More specifically, the General Plan will direct population capacity to the western portions of the County and reduce the potential for growth in the eastern areas. The general population distribution is intended to: (1) facilitate efficient, orderly growth by containing development within areas potentially served by the San Diego County Water Authority (SDCWA) and in proximity to existing infrastructure; (2) protect natural resources through the reduction of population capacity in sensitive areas; (3) reduce overall VMT and associated GHG emissions that contribute to climate change; and (4) retain or enhance the character of communities within the unincorporated County.

3.5.2 County of San Diego: The Climate Action Plan

The 2011 County General Plan EIR outlined a specific mitigation measure (Mitigation Measure CC-1.2) that called for the preparation of a Climate Action Plan (CAP) as discussed above. The County of San Diego developed and adopted (June 2012) the CAP to address the issues of climate change as it relates to growth in the County, and to protect the environment for visitors and residents alike (County 2012a). After the CAP was adopted by the County, a lawsuit was filed by the Sierra Club in April 2013 and the San Diego County Superior Court set aside the approval of the County CAP. Therefore, this analysis does not rely on the CAP.

3.5.3 San Diego Association of Governments (SANDAG): Climate Action Strategy

The SANDAG Climate Action Strategy serves as a guide to help policymakers address climate change as they make decisions to meet the needs of growing populations, as well as to maintain and enhance quality of life and promote economic stability (SANDAG 2010). The purpose of the strategy is to identify land use, transportation, and other related policy measures that could reduce GHG emissions from passenger cars and light-duty trucks as part of the development of the Sustainable Communities Strategy for the 2050 Regional Transportation Plan in compliance with SB 375. Additional policy measures are identified for buildings and energy use, protecting transportation and energy infrastructures from climate impacts, and assisting SANDAG and other local agencies in reducing GHG emissions from their operations.

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 of San Diego, in its memorandum entitled "*2015 GHG Guidance – Recommended Approach to Addressing Climate Change in CEQA Documents*" (County 2015) recommends the following guideline to determine the significance of impacts:

> A proposed project would have a cumulatively considerable contribution to climate change impacts if it would result in a net increase of construction and operational greenhouse gas emissions, either directly or indirectly, and if the project would incorporate mitigation that achieves less than a 16 percent total reduction compared to unmitigated emissions.

The County utilizes a screening-level emission threshold of 900 MT CO_2e to evaluate whether a project must conduct further analysis. This screening threshold is based on a report by the California Air Pollution Control Officers Association (CAPCOA) entitled "CEQA & Climate Change," dated January 2008. The 900 MT CO_2e per year screening threshold was developed by analyzing the capture of 90 percent or more of future discretionary development for residential and commercial projects. County guidance also recommends including construction emissions (amortized over a typical duration of 20 years) in the screening threshold.

If a project generates more than 900 MT CO_2e per year, the significance of the GHG emissions are evaluated against the reductions from the "unmitigated" condition. The unmitigated scenario represents a proposed project as described in the application, in compliance with any applicable standards and regulations.[1] The County has proposed a threshold of 16 percent below unmitigated conditions to evaluate the significance of GHG emissions attributable to a project. If, compared to the unmitigated project, proposed mitigation would reduce GHG emissions by at least 16 percent, this level of mitigation would represent a fair share of what is necessary statewide to achieve AB 32 target.

Unmitigated GHG emissions represent the Proposed Project in compliance with any applicable standards and regulations. This would include effects on vehicle emissions due to Pavley I, and

[1] For the purposes of the analysis in this report, the unmitigated condition also represents the Project's GHG emissions without consideration of Project design features or statewide measures that are allowed to be counted towards the 16 percent reduction target per County guidelines.

effects on energy emissions due to current energy code enforcements and the RPS (to 20 percent).

Project mitigation identified toward the 16 percent requirement thus cannot also include the effects of the Pavley I or the 20 percent RPS because these programs are already included in the calculations that support the 16 percent reduction requirement. Other statewide measures, however, can be included without risk of double counting. This includes the RPS beyond 20 percent (up to 33 percent), LCFS, and Pavley II, which can be included toward the minimum 16 percent mitigation requirement for the Project.

Using this threshold and the calculation methodology, unmitigated emissions (without Project design features) and Project emissions with design features were calculated and are provided here for informational purposes.

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

The method of quantifying and evaluating GHG emissions in this analysis was based on the County of San Diego memorandum entitled "*2015 GHG Guidance – Recommended Approach to Addressing Climate Change in CEQA Documents*" (County 2015) . To evaluate the reductions in GHG emissions from Project design features relative to the unmitigated scenario, emissions from each source of GHGs were estimated for two methods: (1) the Project without GHG-reducing design features (i.e., the unmitigated Project-Equivalent); and (2) the Project with GHG-reducing green building design.

Emissions calculations for both methods started with the following conservative land use assumption: The 239-acre Proposed Project would include the construction of 334 single family residential 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 residential units to 326 residential units for a decrease of 8 units. The trip generation calculations provided in the TIA utilize the 334 residential units, which represents a conservative analysis and this same number is utilized in this GHG report. In addition, the Proposed Project includes up to 54 second units within Neighborhoods 2, 3 and 5 which could be attached or detached from the main unit. The 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
General Light Industrial (WTWRF)	21,600	Square Feet
Single-Family Residential (N 2)	58	Dwelling Units
Single-Family Residential (N 3)	35	Dwelling Units
Single-Family Residential (N 4)	76	Dwelling Units

Note: N = Neighborhood

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 and a reduction of 9.51 percent for LCFS were credited towards "mitigated" emissions. Because CalEEMod already includes the LCFS reduction in its model defaults, the unmitigated vehicle emissions were increased by 9.51 percent to allow the reductions to be applied to the mitigated condition (and avoid double-counting the reduction). See Appendix E for emission reduction adjustments.

The County does not allow a credit for Pavley I regulations as they are already in place. The CalEEMod program already takes Pavley I into account in its model defaults, so it is accounted for in both the unmitigated and mitigated condition.

5.1.2 Building Use Assumptions

For estimates of non-transportation related emissions, similar equations were used whereby total projected energy, water, and waste demands were multiplied by emission factors for each emission source and each GHG. The subsequent revised 2011 Scoping Plan noted the potential to reduce GHG emissions through iterative updates to the Title 24 Energy Efficiency Standards. Title 24 2008 includes standards to achieve a minimum 15 percent greater energy efficiency than Title 24 2005. Therefore, in this analysis, estimates of energy emissions from the Project with GHG-reducing design features incorporates a 15 percent improvement in energy use rates over 2008 energy code standards.

As described in Section 1.4, Project Design Features, the Project incorporates green building design that would exceed the 2008 California Energy Code's residential energy efficiency standards by 15 percent. 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. The analysis additionally incorporated a 13 percent reduction in energy associated GHGs due to implementation of the RPS beyond the already mandated (and accounted for in the baseline estimates) 20 percent renewable energy mix requirement for electricity providers. This improved energy efficiency was incorporated into the Project with GHG reducing features calculations 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 January 2016 and last until mid-2019.

For the purpose of the analysis, Project construction is broken down into three main construction phases, with five individual neighborhoods to be constructed separately (with the exception of Neighborhoods 1 and 5, which would be constructed together). The first phase focuses on overall site grading and rock blasting, which would begin in 2016 and last approximately

two years. The second phase would be the infrastructure installation, which includes the construction of the WTWRF, utility connections, and roadways. The infrastructure phase would last approximately one year. The third phase addresses "vertical" development of the Project, which includes constructing the residential buildings and coating the pavement/architecture, which would take approximately 2.5 years.

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

Table 6
ANTICIPATED CONSTRUCTION SCHEDULE

Component	Construction Activity	Construction Period		
		Start	End	Number of Working Days
Phase 1 – Grading and Blasting				
Neighborhoods 1 & 5	Site Prep	1/5/2016	2/13/2016	30
	Grading	2/16/2016	5/15/2016	75
	Drilling and Blasting	2/16/2016	3/27/2016	30
Neighborhood 2	Site Prep	6/27/2016	7/10/2016	10
	Grading	7/11/2016	8/21/2016	30
	Drilling and Blasting	7/11/2016	8/21/2016	30
Neighborhood 3	Site Prep	1/2/2017	1/15/2017	10
	Grading	1/16/2017	3/4/2017	35
	Drilling and Blasting	1/16/2017	2/26/2017	30
Phase 1 – Grading and Blasting				
Neighborhood 4	Site Prep	7/4/2017	7/29/2017	20
	Grading	8/1/2017	9/30/2017	45
	Drilling and Blasting	8/1/2017	9/9/2017	30

Table 6 (cont.) ANTICIPATED CONSTRUCTION SCHEDULE				
Component	**Construction Activity**	**Construction Period**		
		Start	**End**	**Number of Working Days**
Phase 2 – Infrastructure, Road Construction and WTWRF Installation				
Neighborhoods 1 & 5	Backbone Infrastructure	7/6/2016	4/17/2016	86
Wastewater Treatment and Water Reclamation Facility	Demolition	7/6/2016	7/17/2016	10
	Site Preparation	7/20/2016	7/20/2016	1
	Grading	7/21/2016	7/22/2016	2
	Building Construction	7/23/2016	12/9/2016	100
	Paving	12/10/2016	12/16/2016	5
	Arch. Paint	12/17/2016	12/23/2016	5
Road Construction	Grubbing/Land Clearing	1/1/2017	1/10/2017	9
	Grading/Excavation	1/12/2017	2/22/2017	41
	Drainage/Utilities	2/22/2017	3/20/2017	27
	Paving	3/21/2017	4/4/2017	14
Neighborhood 2	Backbone Infrastructure	1/1/2017	4/29/2017	86
Neighborhood 3	Backbone Infrastructure	1/1/2017	4/29/2017	86
Neighborhood 4	Backbone Infrastructure	1/2/2018	5/1/2018	86
Phase 3 – Vertical Development				
Neighborhood 1 & 5	Building Construction	11/2/2016	10/11/2017	247
	Paving	11/2/2016	10/11/2017	247
	Arch. Paint	2/1/2017	10/11/2017	182
Neighborhood 2	Building Construction	10/12/2017	1/24/2018	75
	Paving	10/12/2017	1/24/2018	75
	Arch. Paint	12/12/2017	1/24/2018	32
Neighborhood 3	Building Construction	1/25/2018	10/10/2018	185
	Paving	1/25/2018	10/10/2018	185
	Arch. Paint	4/24/2018	10/10/2018	122
Neighborhood 4	Building Construction	10/11/2018	5/31/2019	167
	Paving	10/11/2018	5/31/2019	167
	Arch. Paint	1/08/2019	5/31/2019	104

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 bore holes each with a 3- to 6-inch diameter. Several holes are drilled in a 400-square foot area. Typically, the pattern is laid out in a 20-by-20-foot grid, with up to approximately 25-foot-deep holes. A contractor then loads the holes with carefully metered explosives. The "shot" is timed to detonate each hole(s) in sequence. This minimizes the ground vibration and noise of the blast, while maximizing fracture of the rock. Some dust is created as a result of the blast. However, the dust would be fully dissipated within 30 to 60 seconds following the shot. The rock would be broken up to sizes less than 18 inches in diameter.

Following blasting, the rock resource would be fractured and can be moved with conventional earthmoving equipment. A front-end loader 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 lb/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 cy of export for Mt. Whitney Road. Appendix B presents the Roadway Construction emission modeling output data.

Vertical construction of buildings is anticipated to take 2.5 years.

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 2016, 2017, 2018, and

2019, emission factors for OFFROAD equipment for scenario years 2016, 2017, 2018, and 2019 were used.

All construction equipment operating on the Project site 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.

5.1.5 Construction Emissions

Table 8 presents a summary of the GHG emissions resulting from construction activities by year. 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 (MT/YR)

Year	CO_2	CH_4	N_2O	CO_2e
	MT/yr			
2016	979	0.23	0.05	1,000
2017	1,888	0.47	0.05	1,913
2018	568	0.15	0.00	571
2019	569	0.13	0.00	572
TOTAL CONSTRUCTION GHG EMISSIONS				**4,056**

The Project-related construction activities are estimated to generate approximately 4,056 MT of CO_2e emissions. For construction emissions, the County guidance recommends that the emissions be amortized over 20 years and added to operational emissions, as appropriate. Amortized over 20 years, construction equipment would contribute 203 MT per year of CO_2e emissions to the Project's total. These emissions are added to the expected annual operational GHG emissions below.

While construction emissions are not included in the CARB's BAU 2020 forecast, and reductions in construction emissions are not specifically identified in the CARB Scoping Plan, the Project's estimated construction emissions are added to the Project's operation emissions as described in the next section.

5.2 Unmitigated Operational Emissions

Table 9 includes the annual unmitigated 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.

5.2.1 Vehicle (Mobile) Emissions

The Project without GHG-reducing design features would generate 3,786 Average Daily Trips ([ADT] LLG Engineers 2015). As identified in Section 3.2 Regulatory Background, there are several plans, policies, and regulations aimed at reducing transportation-related GHG emissions statewide by 2020. These regulations would reduce statewide transportation-related GHG emissions by increasing average vehicle fuel economy, decreasing engine combustion emissions, and decreasing average VMT and trip length. The key regulations affecting vehicle emissions include the national CAFE Standards, while not quantified in the CARB Scoping Plan, would likely contribute to further reductions in statewide vehicle GHG emissions.

It can be assumed that vehicles associated with the Project would benefit from the new regulations, and associated vehicle emissions would accordingly decrease. As noted earlier in the Methodology section of this report (Section 5.1), since Pavley I is already in place, it is already accounted for in the CalEEMod model and is not a credit allowable for the Project. Adjustments were made to the model to allow the Project to take credit for Pavley II and LCFS in the mitigated condition.

CalEEMod assumed an annual total of 10,815,031 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 CalEEMod default trip lengths. 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 unmitigated baseline condition would result in vehicle-related emissions of 4,534 MT CO_2e annually. A detailed breakdown of the emissions for the mobile source category between the CalEEMod output values and the addition of LCFS and the reduction of Pavley II is provided in Attachment E.

5.2.2 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.

5.2.3 Energy Emissions

Electric power generation accounted for the second largest sector contributing to both inventoried and projected statewide GHG emissions, comprising 24 percent of the projected total 2020 statewide BAU emissions (CARB 2008b). 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).

For the calculations for the Project with GHG-reducing design features, a 15 percent improvement in building energy efficiency over 2008 Title 24 was factored into the equation.

5.2.4 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.

5.2.5 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 with and without GHG-reducing design features, a countywide average waste disposal rate was used and was obtained from the California Department of Resources Recycling and Recovery (CalRecycle). While the Proposed Project would implement lumber and other materials conservation (see Section 2.2) and likely generate less landfill waste than average, these savings cannot be estimated at this time.

CalRecycle maintains a list of different waste generation rates for residential, commercial, and industrial uses from a variety of sources. The single family residential waste generation rates range from 7.8 to 11.4 pounds per unit per day (CalRecycle 2009). To be conservative, the higher generation rate of 11.4 pounds per unit per day was used to determine the total volume of waste by weight. This value was then multiplied by emissions factors obtained from the USEPA report *Solid Waste Management and Greenhouse Gases* (USEPA 2006b) for the different material classes (glass, metal, plastic, etc.) and two different waste streams (to landfill or to recycling). For the landfill estimates, landfill gas recovery for energy was assumed for both the landfill and recycling estimates. Local recycling and disposal (to landfill) percentages (of total waste generated) were also obtained from CalRecycle and reflect current waste disposal practice in accordance with the statutory 50 percent diversion mandate.

As shown in Table 4, the CARB Scoping Plan includes Recycling and Waste measures that would reduce statewide emissions by roughly 1.0 MMT CO_2e by 2020. This is to be achieved through improved landfill methane capture. Also, while not shown in Table 4, the CARB Scoping Plan includes other waste sector reduction strategies not counted toward the statewide 2020 emissions reduction target. CARB estimates that these additional waste and recycling sector measures would provide up to an additional 10 MMT CO_2e reduction by 2020. Thus, it is possible that the embodied energy and emissions resulting from disposing of the Proposed Project's solid waste related GHG emissions would achieve approximately 190 MT CO_2e reduction by 2020 due to these measures.

5.2.6 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.

Table 9
ESTIMATED UNMITIGATED OPERATIONAL EMISSIONS (MT/yr)

Source	CO_2	CH_4	N_2O	CO_2e
	MT/yr			
Amortized Construction	200	0.05	0.01	203
Area	241	0.01	0.00	242
Energy	1,348	0.04	0.02	1,354
Mobile	4,490	0.17	0.00	4,534
Solid Waste	85	5.02	0.00	190
Water Usage (including Wastewater Treatment)	187	0.88	0.02	213
Off-road Equipment	147	0.01	0.00	147
TOTAL	**6,697**	**6.19**	**0.05**	**6,883**

Source: HELIX 2015 – Operational CalEEMod results are provided in Appendix D.
Note: CalEEMod mobile source emissions were adjusted to remove the GHG reductions from the Low Carbon Fuel Standard (LCFS). See Appendix E.

5.3 The 16 Percent Threshold Analysis (Project with Project Design Features)

The threshold provided in the County of San Diego *GHG Guidance* (County 2015) states that:

> A proposed project would have a cumulatively considerable contribution to climate change impacts if it would result in a net increase of construction and operational greenhouse gas emissions, either directly or indirectly, and if the project would incorporate mitigation that achieves less than a 16 percent total reduction compared to unmitigated emissions.

As described above in Section 4.1.1, the 16 percent threshold is based on current adjustments to the 2011 Scoping Plan forecasts for 2020 that adjusted the quantities of reductions coming from the Scoping Plan GHG reduction measures. Per the County's GHG guidelines, unmitigated Project GHG emissions (without project design features) attributable to the Project at full buildout are compared to Project GHG emissions with project design features. As shown in Table 13, the proposed Project with the state-mandated measures and project design features would lower the GHG emissions to 5,717 MT CO_2e per year.

Unmitigated GHG emissions without project design features represent the Proposed Project in compliance with any applicable standards and regulations that are already included in the calculations that support the 16% mitigation requirement. This would not include effects on vehicle emissions due to LCFS, and effects on energy emissions due to current energy code enforcements and the RPS (above and beyond 20 percent). This means that electricity and natural gas emissions reductions (on the order of 15 percent) due to stricter energy-efficiency standards in the current 2013 Title 24 energy code are to be accounted for in the emissions estimate and improvements over the 2008 code can be credited towards the 16 percent reduction. Measures applied toward the 16 percent requirement cannot also include the effects of the Pavley I or the 20 percent RPS because these programs are already included in the calculations that support the 16 percent reduction requirement. Other statewide measures, however, can be included without risk of double counting. This includes the RPS beyond 20 percent (up to 33 percent), LCFS, Pavley II, and AB75 solid waste diversion rates, which can all be included toward the minimum 16 percent mitigation requirement for the Project. Calculations are contained in Attachment E.

5.3.1 Vehicle Emissions

The Project would generate approximately 3,786 ADT. As discussed above, Pavley II and LCFS can be included toward the minimum 16 percent reduction requirement.

The LCFS (9.51 percent) and Pavley II (2.38 percent) would result in 12 percent reduction in vehicular emissions. This would result in the emission of 3,995 MT CO_2e annually from the Project.

5.3.2 Energy Emissions

The RPS beyond 20 percent (up to 33 percent) can be included toward the minimum 16 percent mitigation requirement. Therefore, the electricity emissions calculated for the unmitigated Project in the CalEEMod model were reduced by an additional 11.4 percent to account for further implementation of the RPS. Additionally, the Proposed Project would exceed the 2008 California Energy Code's energy efficiency standards by 15 percent. The following energy efficient items are planned for the housing development: improved heating, ventilation and air condition (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.

Electric Vehicle Charging Devices. The Project would install EV charging stations by providing sufficient electrical capacity and appropriate circuitry in proximity to vehicle parking areas and/or garages.

Solar Roof. The Project would also include solar photovoltaic (PV) systems which would provide a minimum of 30 percent of residential electricity needs per planning area (Neighborhoods 1-5). Using electricity generated from PV systems displaces electricity demand which would ordinarily be supplied by the local utility. Since zero GHG emissions are associated with electricity generation from PV systems, 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. According to the Scoping Plan, the California Solar Initiative would reduce the GHG emissions statewide by approximately 10 percent. By using the same percent GHG reduction, it was conservatively assumed that approximately 30 percent of the total electricity demand for the Proposed Project would be provided by the PV system. The Proposed Project's solar PV would result in a 253 MT CO_2e reduction in GHG emissions, which represents a 30 percent reduction in electricity, or a 19 percent reduction for the entire energy sector. With the implementation of the state-wide 33 percent RPS, energy efficiency improvements, and roof solar panels, the Project would result in the indirect emission of 906 MT CO_2e annually from energy usage.

5.3.3 Water Use and Wastewater Treatment Emissions

Project water emissions were adjusted to account for the recent 2013 CALGreen mandate to reduce water consumption by up to 20 percent. The installation of the low flow water features would result in the reduction of GHG emissions associated with water usage by approximately 14 percent, resulting in an annual reduction of 29 MT CO_2e.

Additionally, the mitigated emissions include a reduction 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 use as described in CAPCOA Measure WSW-1. The GHG emission reduction index for the Proposed Project (in southern California)

was determined to be 65 percent. This would result in a reduction of 55 MT CO_2e annually from the unmitigated Project.

5.3.4 Solid Waste Emissions

As discussed above, AB75 can be included toward the minimum 16 percent reduction requirement because it was not included in the calculations that support the requirement. AB 75 bill requires diversion of at least 50 percent of the solid waste from landfills and implementation of county-wide solid waste recycling practices to achieve this goal would result in a 50 percent reduction from Project-generated solid waste (95 MT CO_2e). In 2011, the State legislature enacted AB 341, increasing the diversion target to 75 percent statewide by 2020. As the Project is assumed to be fully operational before the target year, the more conservative 50 percent diversion rate from AB 75 was used in this analysis. This would result in the emission of 95 MT CO_2e annually from solid waste.

5.3.5 Summary

The state of California has mandated a number of GHG reduction measures as part of the CARB Scoping Plan for achieving the goals of AB 32. Table 10 shows that from compliance with the selected state mandated Scoping Plan measures and AB 75, Project-related GHG emissions would be reduced by approximately 731 MT CO_2e per year.

Table 10 ESTIMATED GREENHOUSE GAS EMISSIONS REDUCTIONS FROM STATE MEASURES (MT/year)				
Measure	**Source**	**Percent Reduction from Unmitigated[a]**	**Unmitigated CO_2e[b]**	**CO_2e Reduced[c]**
Renewable Electricity Standard	Energy	11.4	844[d]	96
Executive Order S-1-07 (Low Carbon Fuel Standard)	Mobile	9.51	4,534	431
Assembly Bill 1493 (Pavley II Standards)	Mobile	2.38	4,302.95	108
AB 75	Waste	50.0	190	95
			Subtotal – MT CO_2e Reduced	**731**

[a] Source: CARB2014a
[b] Emissions available from Table 10, Estimated Unmitigated Operational Emissions, by source.
[c] CO_2e Reduction is quantified by multiplying the Percent Reduction from Unmitigated by the Unmitigated CO_2e value.
[d] Emissions related to natural gas were removed, so that only electricity-related GHG emissions were included.
Note: Totals may not add up exactly due to rounding.

In addition to reductions from state mandates, the Project has incorporated several measures that would further reduce GHG emissions. As identified in Table 11, the proposed Project design features would result in GHG emissions reductions of approximately 436 MT CO2e per year.

Table 11 ESTIMATED GREENHOUSE GAS EMISSIONS REDUCTIONS FROM PROJECT DESIGN FEATURES (MT/year)					
Feature	**Source**	**2010 CAPCOA[a] Report Measure**	**Percent Reduction from Unmitigated**	**Unmitigated CO_2e**	**CO_2e Reduced**
Energy Efficient Features	Energy	BE-1	7.2	1,354	98
On-site Renewables	Energy	AE-1	30.0	844	253
Low Flow Fixtures	Water	WUW-1	13.9	213	29
Reclaimed Water	Water	WSW-1	65.0	85	55
				Subtotal – MT CO_2e Reduced	**436**

Source: CalEEMod (output data is provided in Appendix D)
[a] California Air Pollution Control Officers Association
Note: Totals may not add up exactly due to rounding.

As shown in Table 12, with reductions associated with state mandates and implementation of the proposed design features, the Project would result in GHG emissions of 5,717 MT CO_2e per year.

Table 12 ESTIMATED OPERATIONAL EMISSIONS WITH PROJECT DESIGN FEATURES AND STATE MANDATED MEASURES (MT/yr)				
Source	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
	MT/yr			
Amortized Construction	200	0.05	0.01	203
Area	241	0.01	0.00	242
Energy	902	0.03	0.01	906
Mobile	3,993	0.15	0.00	3,995
Solid Waste	42	2.51	0.00	95
Water Usage (including Wastewater Treatment)	114	0.49	0.01	128
Off-road Equipment	147	0.01	0.00	147
TOTAL	**5,639**	**3.25**	**0.03**	**5,717**

Source: HELIX 2015 – 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.

5.4 Significance of Impacts

Per the County's GHG guidelines, unmitigated GHG emissions attributable to the Project at full buildout are compared to Project GHG emissions with Project design features and mitigation measures. Unmitigated Project GHG emissions would be 6,883 MT CO_2e per year. As illustrated in Table 13, the total GHG emission reductions related to state-mandated Scoping Plan Measures and proposed Project design features equals 1,167 MT CO_2e per year. This amount subtracted from the Unmitigated Project GHG emissions results in net GHG emissions of 5,717 MT CO_2e per year for the Proposed Project.

Table 13 GHG EMISSIONS SUMMARY				
Emission Sources	**Annual Emissions (MT CO_2e)**			
	Unmitigated	**Reductions**		**Mitigated Project**
		State Measures	**Project Design Features**	
Area Sources	242	-	-	242
Energy Sources	1,354	(96)	(351)	906
Mobile Sources	4,534	(539)	-	3,995
Solid Waste Sources	190	(95)	-	95
Water/Wastewater Sources	213	-	(85)	128
Off-road Equipment	147	-	-	147
Construction (Annualized over 20 years)	203	-	-	203
TOTAL	6,883	(730)	(436)	5,717
Total Reduced Emissions	(1,167)			
Percent Reduction	17%			
Greater than 16 Percent Reduction?	Yes			
Significant Impact?	**No**			

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

As shown, the Proposed Project with Project Design Features would reduce emissions by 17 percent, thus achieving the anticipated GHG reduction goal (16 percent). In accordance with this threshold, impacts would not be significant.

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 Scoping Plan and its implementing and complementary regulations are discussed in Section 1. As described in Section 4.1.1, the 16 percent reduction in GHG emissions goal relative to an unmitigated project is derived from CARB's 2010 updated 2020 emissions projections and revised 2011 Scoping Plan. The revised 2011 projections and Scoping Plan account for less overall growth and less energy/fuel consumption due to the long-term dampened economic conditions. The Project, by achieving a 16 percent reduction goal relative to an unmitigated project without design features, would be considered consistent with the revised 2011 Scoping Plan and AB 32's 2020 reduction target.

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 2013 Title 24 standards (which surpass the 2008 Title 24 Energy Efficiency Standards by a minimum of 15 percent), reduce indoor water consumption by up to 20 percent, and have at least 30 percent of residential electricity generated by solar panels. 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, as evaluated in accordance with the 16 percent reduction relative to unmitigated without design features goal, would meet the 16 percent reduction goal relative to an unmitigated project, The Project's consistency with specific General Plan Conservation Element policies is analyzed in Table 14.

Table 14
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 30 percent of residential electricity needs through solar panels 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 of at least 15 percent beyond 2008 Title 24 requirements, 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.

Table 14 (cont.) COUNTY GENERAL PLAN POLICIES	
Policy	**Project Consistency**
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.
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 13, implementation of the Project including design features would result in a 17 percent reduction compared to unmitigated (without design features) conditions, thereby achieving the County's GHG minimum 16 percent reduction target. The Project would be consistent with 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 HORIZON YEAR (2030 AND 2050) EMISSIONS INVENTORIES

Beyond Project buildout, the Project's GHG emissions would reduce with the continued implementation of the 2020 reduction strategies and increased stringency of state reduction measures based on actions included in the 2014 Scoping Plan related to energy use and transportation that transition the state towards meeting its longer term GHG emission reduction goals. In addition to the 2020 reduction measures, the following assumptions were included in the reduced 2030 GHG emissions:

- Mobile source reductions resulting from fleet wide emissions improvements over current standards were estimated using the EMFAC2014 emissions inventories. Emissions were modeled using Project specific assumptions for fleet mix and VMT as detailed the CalEEMod output files provided in Appendix G.

- Through compliance with AB 341, a total of 75 percent of the Project's solid waste would be diverted from landfills.

The emissions by source for 2030 were calculated by modeling 2030 mobile source emissions using EMFAC2014 and applying a percent reduction to the 2020 emissions inventory for the waste reduction measure. Table 15 summarizes the 2030 emissions as broken down by emissions category. Construction emissions are included in the summary provided in Table 15 and are expected to be fully amortized by 2040.

Table 15
ESTIMATED 2030 OPERATIONAL EMISSIONS (MT/yr)

Source	CO_2	CH_4	N_2O	CO_2e
	MT/yr			
Area	241	0.01	0.00	242
Energy	902	0.03	0.01	906
Mobile	3,723	0.12	0.00	3,725
Solid Waste	21	1.26	0.00	48
Water Usage (including Wastewater Treatment)	114	0.49	0.01	128
Off-road Equipment	147	0.01	0.00	147
Construction	203	--	--	203
TOTAL	**5,148**	**1.91**	**0.03**	**5,196**

Source: HELIX 2015 – EMFAC2014 results are provided in Appendix G
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.

Beyond 2030, the Project's GHG emissions would reduce with the continued implementation of the 2020 reduction strategies and increased stringency of state reduction measures, primarily associated with mobile-sources. The following assumption was included in the reduced 2050 GHG emissions:

- Mobile source reductions resulting from fleet wide emissions improvements over current standards were estimated using the EMFAC2014 emissions inventories. Emissions were modeled using Project specific assumptions for fleet mix and VMT as detailed the CalEEMod output files provided in Appendix G.

Mobile source emissions for 2050 were calculated by modeling 2030 through 2050 mobile source emissions using EMFAC2014. Table 16 summarizes the 2050 emissions as broken down by emissions category.

Table 16
ESTIMATED 2050 OPERATIONAL EMISSIONS (MT/yr)

Source	CO_2	CH_4	N_2O	CO_2e
	MT/yr			
Area	241	0.01	0.00	242
Energy	902	0.03	0.01	906
Mobile	3,214	0.09	0.00	3,216
Solid Waste	21	1.26	0.00	48
Water Usage (including Wastewater Treatment)	114	0.49	0.01	128
Off-road Equipment	147	0.01	0.00	147
TOTAL	**4,638**	**1.89**	**0.03**	**4,687**

Source: HELIX 2015 – EMFAC2014 results are provided in Appendix G
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.

Through implementation of the 2014 Scoping Plan Measures, it is expected that additional reductions would occur. Strengthening of the LCFS and expansion of the zero emissions vehicles program will likely result in further reductions to mobile source emissions. Additionally, the RPS would likely continue beyond the 2020 goal of 33 percent. However, because the design of any such measures has yet to be finalized, any reduction credit associated with these measures has not been included. As such, the analysis presented above reflects a conservative set of assumptions.

9.0 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.

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.

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

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

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

2. Installation of approximately 1,600 linear feet of new force main pipeline from the Project site to an existing City sewer line, with the new facilities to be located within an

existing 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 guidance 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 of 5,717 MT per year of CO_2e emissions. As shown in Table 13, the Proposed Project with PDFs would reduce emissions by 17 percent (from 6,884 MT CO_2e to 5,718 MT CO_2e per year), thus achieving the anticipated GHG reduction goal (16 percent). In accordance with this threshold, impacts would not be significant.

9.2 Option 2: Connection to Vallecitos Water District (VWD) 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. For construction emissions, the County guidance recommends that the emissions be amortized over 20 years and added to operational emissions, as appropriate. Amortized over 20 years, construction equipment would contribute 0.72 MT per year of CO_2e emissions to this option's total. These emissions are added to the expected annual operational GHG emissions of 5,717 MT per year of CO_2e emissions. As shown in Table 13, the Proposed Project with PDFs would reduce emissions by 17 percent (from 6,884 MT CO_2e to 5,718 MT CO_2e per year), thus achieving the anticipated GHG reduction goal (16 percent). In accordance with this threshold, impacts would not be significant.

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

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

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

The off-site pipeline-related construction activities are estimated to generate approximately 21 MT of CO_2e emissions. For construction emissions, the County guidance recommends that

the emissions be amortized over 20 years and added to operational emissions, as appropriate. 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 of 5,717 MT per year of CO_2e emissions. As shown in Table 13, the Proposed Project with PDFs would reduce emissions by 17 percent (from 6,884 MT CO_2e to 5,718 MT CO_2e per year), thus achieving the anticipated GHG reduction goal (16 percent). In accordance with this threshold, impacts would not be significant.

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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 -

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 -

Architectural Coating -

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

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

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

2.0 Emissions Summary

2.1 Overall Construction

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					
2016	0.3168	3.5648	2.4573	2.9500e-003	0.6043	0.1753	0.7796	0.2860	0.1613	0.4472	0.0000	276.2766	276.2766	0.0815	0.0000	277.9875
Total	**0.3168**	**3.5648**	**2.4573**	**2.9500e-003**	**0.6043**	**0.1753**	**0.7796**	**0.2860**	**0.1613**	**0.4472**	**0.0000**	**276.2766**	**276.2766**	**0.0815**	**0.0000**	**277.9875**

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					
2016	0.0383	0.1330	1.6381	2.9500e-003	0.2763	2.3900e-003	0.2787	0.1299	2.3800e-003	0.1322	0.0000	276.2763	276.2763	0.0815	0.0000	277.9872
Total	**0.0383**	**0.1330**	**1.6381**	**2.9500e-003**	**0.2763**	**2.3900e-003**	**0.2787**	**0.1299**	**2.3800e-003**	**0.1322**	**0.0000**	**276.2763**	**276.2763**	**0.0815**	**0.0000**	**277.9872**

	ROG	**NOx**	**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	**87.90**	**96.27**	**33.34**	**0.00**	**54.27**	**98.64**	**64.25**	**54.59**	**98.52**	**70.43**	**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	0.0374	0.0142	1.2292	6.0000e-005		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**0.0374**	**0.0142**	**1.2292**	**6.0000e-005**	**0.0000**	**6.7600e-003**	**6.7600e-003**	**0.0000**	**6.7600e-003**	**6.7600e-003**	**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	0.0374	0.0142	1.2292	6.0000e-005		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**0.0374**	**0.0142**	**1.2292**	**6.0000e-005**	**0.0000**	**6.7600e-003**	**6.7600e-003**	**0.0000**	**6.7600e-003**	**6.7600e-003**	**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	1/5/2016	2/13/2016	5	29	
2	Grading	Grading	2/16/2016	5/29/2016	5	74	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0

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

OffRoad Equipment

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

Trips and VMT

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

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0736	0.7922	0.5960	5.7000e-004		0.0426	0.0426		0.0392	0.0392	0.0000	53.4718	53.4718	0.0161	0.0000	53.8105
Total	**0.0736**	**0.7922**	**0.5960**	**5.7000e-004**	**0.2710**	**0.0426**	**0.3136**	**0.1490**	**0.0392**	**0.1882**	**0.0000**	**53.4718**	**53.4718**	**0.0161**	**0.0000**	**53.8105**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-004	1.1800e-003	0.0113	3.0000e-005	2.0900e-003	2.0000e-005	2.1100e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.9505	1.9505	1.0000e-004	0.0000	1.9526
Total	**9.0000e-004**	**1.1800e-003**	**0.0113**	**3.0000e-005**	**2.0900e-003**	**2.0000e-005**	**2.1100e-003**	**5.6000e-004**	**1.0000e-005**	**5.7000e-004**	**0.0000**	**1.9505**	**1.9505**	**1.0000e-004**	**0.0000**	**1.9526**

3.2 Site Preparation - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1220	0.0000	0.1220	0.0670	0.0000	0.0670	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.9000e-003	0.0254	0.3080	5.7000e-004		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	53.4717	53.4717	0.0161	0.0000	53.8105
Total	**6.9000e-003**	**0.0254**	**0.3080**	**5.7000e-004**	**0.1220**	**4.6000e-004**	**0.1224**	**0.0670**	**4.6000e-004**	**0.0675**	**0.0000**	**53.4717**	**53.4717**	**0.0161**	**0.0000**	**53.8105**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-004	1.1800e-003	0.0113	3.0000e-005	2.0900e-003	2.0000e-005	2.1100e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.9505	1.9505	1.0000e-004	0.0000	1.9526
Total	**9.0000e-004**	**1.1800e-003**	**0.0113**	**3.0000e-005**	**2.0900e-003**	**2.0000e-005**	**2.1100e-003**	**5.6000e-004**	**1.0000e-005**	**5.7000e-004**	**0.0000**	**1.9505**	**1.9505**	**1.0000e-004**	**0.0000**	**1.9526**

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3253	0.0000	0.3253	0.1349	0.0000	0.1349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2397	2.7681	1.8181	2.2800e-003		0.1326	0.1326		0.1220	0.1220	0.0000	215.3242	215.3242	0.0650	0.0000	216.6881
Total	**0.2397**	**2.7681**	**1.8181**	**2.2800e-003**	**0.3253**	**0.1326**	**0.4579**	**0.1349**	**0.1220**	**0.2569**	**0.0000**	**215.3242**	**215.3242**	**0.0650**	**0.0000**	**216.6881**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5400e-003	3.3500e-003	0.0320	7.0000e-005	5.9300e-003	5.0000e-005	5.9800e-003	1.5800e-003	4.0000e-005	1.6200e-003	0.0000	5.5301	5.5301	2.9000e-004	0.0000	5.5362
Total	**2.5400e-003**	**3.3500e-003**	**0.0320**	**7.0000e-005**	**5.9300e-003**	**5.0000e-005**	**5.9800e-003**	**1.5800e-003**	**4.0000e-005**	**1.6200e-003**	**0.0000**	**5.5301**	**5.5301**	**2.9000e-004**	**0.0000**	**5.5362**

3.3 Grading - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1464	0.0000	0.1464	0.0607	0.0000	0.0607	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0280	0.1031	1.2868	2.2800e-003		1.8700e-003	1.8700e-003		1.8700e-003	1.8700e-003	0.0000	215.3239	215.3239	0.0650	0.0000	216.6879
Total	**0.0280**	**0.1031**	**1.2868**	**2.2800e-003**	**0.1464**	**1.8700e-003**	**0.1482**	**0.0607**	**1.8700e-003**	**0.0626**	**0.0000**	**215.3239**	**215.3239**	**0.0650**	**0.0000**	**216.6879**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5400e-003	3.3500e-003	0.0320	7.0000e-005	5.9300e-003	5.0000e-005	5.9800e-003	1.5800e-003	4.0000e-005	1.6200e-003	0.0000	5.5301	5.5301	2.9000e-004	0.0000	5.5362
Total	**2.5400e-003**	**3.3500e-003**	**0.0320**	**7.0000e-005**	**5.9300e-003**	**5.0000e-005**	**5.9800e-003**	**1.5800e-003**	**4.0000e-005**	**1.6200e-003**	**0.0000**	**5.5301**	**5.5301**	**2.9000e-004**	**0.0000**	**5.5362**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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
0.509376	0.073655	0.192210	0.135105	0.037177	0.005354	0.012300	0.020284	0.001820	0.002092	0.006537	0.000620	0.003469

5.0 Energy Detail

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	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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	0.0374	0.0142	1.2292	6.0000e-005		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Unmitigated	0.0374	0.0142	1.2292	6.0000e-005		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	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	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0374	0.0142	1.2292	6.0000e-005		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Total	**0.0374**	**0.0142**	**1.2292**	**6.0000e-005**		**6.7600e-003**	**6.7600e-003**		**6.7600e-003**	**6.7600e-003**	**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	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0374	0.0142	1.2292	6.0000e-005		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Total	**0.0374**	**0.0142**	**1.2292**	**6.0000e-005**		**6.7600e-003**	**6.7600e-003**		**6.7600e-003**	**6.7600e-003**	**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	0.87	0.96	0.29	0.00	0.99	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.90	0.97	0.47	0.00	0.99	0.99	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

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

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

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

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

Fugitive Dust Mitigation

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

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

Operational Percent Reduction Summary

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

Operational Mobile Mitigation

Project Setting: Low Density Suburban

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

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

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

Area Mitigation

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

Energy Mitigation Measures

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

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

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

Solid Waste Mitigation

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

Valiano - Grading (Phase 2 - N 2)

San Diego County, 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.

Energy Use - Construction only.

Water And Wastewater - Construction only.

Solid Waste - Construction only.

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

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Landscape Equipment -

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

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

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

2.0 Emissions Summary

2.1 Overall Construction

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					
2016	0.1239	1.3971	0.9594	1.1600e-003	0.2236	0.0685	0.2920	0.1044	0.0630	0.1674	0.0000	108.6467	108.6467	0.0321	0.0000	109.3196
Total	**0.1239**	**1.3971**	**0.9594**	**1.1600e-003**	**0.2236**	**0.0685**	**0.2920**	**0.1044**	**0.0630**	**0.1674**	**0.0000**	**108.6467**	**108.6467**	**0.0321**	**0.0000**	**109.3196**

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					
2016	0.0151	0.0523	0.6447	1.1600e-003	0.1023	9.4000e-004	0.1033	0.0475	9.4000e-004	0.0484	0.0000	108.6465	108.6465	0.0321	0.0000	109.3195
Total	**0.0151**	**0.0523**	**0.6447**	**1.1600e-003**	**0.1023**	**9.4000e-004**	**0.1033**	**0.0475**	**9.4000e-004**	**0.0484**	**0.0000**	**108.6465**	**108.6465**	**0.0321**	**0.0000**	**109.3195**

	ROG	**NOx**	**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	**87.85**	**96.26**	**32.80**	**0.00**	**54.23**	**98.63**	**64.64**	**54.56**	**98.51**	**71.10**	**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	0.0132	5.0000e-003	0.4321	2.0000e-005		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**0.0132**	**5.0000e-003**	**0.4321**	**2.0000e-005**	**0.0000**	**2.3800e-003**	**2.3800e-003**	**0.0000**	**2.3800e-003**	**2.3800e-003**	**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	0.0132	5.0000e-003	0.4321	2.0000e-005		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**0.0132**	**5.0000e-003**	**0.4321**	**2.0000e-005**	**0.0000**	**2.3800e-003**	**2.3800e-003**	**0.0000**	**2.3800e-003**	**2.3800e-003**	**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	6/27/2016	7/10/2016	5	10	
2	Grading	Grading	7/11/2016	8/21/2016	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

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

OffRoad Equipment

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

Trips and VMT

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

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0254	0.2732	0.2055	2.0000e-004		0.0147	0.0147		0.0135	0.0135	0.0000	18.4386	18.4386	5.5600e-003	0.0000	18.5554
Total	**0.0254**	**0.2732**	**0.2055**	**2.0000e-004**	**0.0903**	**0.0147**	**0.1050**	**0.0497**	**0.0135**	**0.0632**	**0.0000**	**18.4386**	**18.4386**	**5.5600e-003**	**0.0000**	**18.5554**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	4.1000e-004	3.8900e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	1.0000e-005	2.0000e-004	0.0000	0.6726	0.6726	4.0000e-005	0.0000	0.6733
Total	**3.1000e-004**	**4.1000e-004**	**3.8900e-003**	**1.0000e-005**	**7.2000e-004**	**1.0000e-005**	**7.3000e-004**	**1.9000e-004**	**1.0000e-005**	**2.0000e-004**	**0.0000**	**0.6726**	**0.6726**	**4.0000e-005**	**0.0000**	**0.6733**

3.2 Site Preparation - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0407	0.0000	0.0407	0.0223	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3800e-003	8.7600e-003	0.1062	2.0000e-004		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	18.4385	18.4385	5.5600e-003	0.0000	18.5553
Total	**2.3800e-003**	**8.7600e-003**	**0.1062**	**2.0000e-004**	**0.0407**	**1.6000e-004**	**0.0408**	**0.0223**	**1.6000e-004**	**0.0225**	**0.0000**	**18.4385**	**18.4385**	**5.5600e-003**	**0.0000**	**18.5553**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	4.1000e-004	3.8900e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	1.0000e-005	2.0000e-004	0.0000	0.6726	0.6726	4.0000e-005	0.0000	0.6733
Total	**3.1000e-004**	**4.1000e-004**	**3.8900e-003**	**1.0000e-005**	**7.2000e-004**	**1.0000e-005**	**7.3000e-004**	**1.9000e-004**	**1.0000e-005**	**2.0000e-004**	**0.0000**	**0.6726**	**0.6726**	**4.0000e-005**	**0.0000**	**0.6733**

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0972	1.1222	0.7371	9.3000e-004		0.0538	0.0538		0.0495	0.0495	0.0000	87.2936	87.2936	0.0263	0.0000	87.8465
Total	**0.0972**	**1.1222**	**0.7371**	**9.3000e-004**	**0.1301**	**0.0538**	**0.1839**	**0.0540**	**0.0495**	**0.1034**	**0.0000**	**87.2936**	**87.2936**	**0.0263**	**0.0000**	**87.8465**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0300e-003	1.3600e-003	0.0130	3.0000e-005	2.4100e-003	2.0000e-005	2.4200e-003	6.4000e-004	2.0000e-005	6.6000e-004	0.0000	2.2419	2.2419	1.2000e-004	0.0000	2.2444
Total	**1.0300e-003**	**1.3600e-003**	**0.0130**	**3.0000e-005**	**2.4100e-003**	**2.0000e-005**	**2.4200e-003**	**6.4000e-004**	**2.0000e-005**	**6.6000e-004**	**0.0000**	**2.2419**	**2.2419**	**1.2000e-004**	**0.0000**	**2.2444**

3.3 Grading - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0586	0.0000	0.0586	0.0243	0.0000	0.0243	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0114	0.0418	0.5217	9.3000e-004		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	87.2935	87.2935	0.0263	0.0000	87.8464
Total	**0.0114**	**0.0418**	**0.5217**	**9.3000e-004**	**0.0586**	**7.6000e-004**	**0.0593**	**0.0243**	**7.6000e-004**	**0.0250**	**0.0000**	**87.2935**	**87.2935**	**0.0263**	**0.0000**	**87.8464**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0300e-003	1.3600e-003	0.0130	3.0000e-005	2.4100e-003	2.0000e-005	2.4200e-003	6.4000e-004	2.0000e-005	6.6000e-004	0.0000	2.2419	2.2419	1.2000e-004	0.0000	2.2444
Total	**1.0300e-003**	**1.3600e-003**	**0.0130**	**3.0000e-005**	**2.4100e-003**	**2.0000e-005**	**2.4200e-003**	**6.4000e-004**	**2.0000e-005**	**6.6000e-004**	**0.0000**	**2.2419**	**2.2419**	**1.2000e-004**	**0.0000**	**2.2444**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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	0.0132	5.0000e-003	0.4321	2.0000e-005		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003	0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179
Unmitigated	0.0132	5.0000e-003	0.4321	2.0000e-005		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003	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	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0132	5.0000e-003	0.4321	2.0000e-005		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003	0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179
Total	**0.0132**	**5.0000e-003**	**0.4321**	**2.0000e-005**		**2.3800e-003**	**2.3800e-003**		**2.3800e-003**	**2.3800e-003**	**0.0000**	**0.7035**	**0.7035**	**6.9000e-004**	**0.0000**	**0.7179**

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	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0132	5.0000e-003	0.4321	2.0000e-005		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003	0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179
Total	**0.0132**	**5.0000e-003**	**0.4321**	**2.0000e-005**		**2.3800e-003**	**2.3800e-003**		**2.3800e-003**	**2.3800e-003**	**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**

7.2 Water by Land Use

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**

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	0.87	0.96	0.29	0.00	0.99	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.90	0.97	0.47	0.00	0.99	0.99	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

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

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

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

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

Fugitive Dust Mitigation

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

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

Operational Percent Reduction Summary

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

Operational Mobile Mitigation

Project Setting: Low Density Suburban

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

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

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

Area Mitigation

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

Energy Mitigation Measures

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

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

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

Solid Waste Mitigation

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

Valiano - Grading (Phase 3 - N 3)

San Diego County, 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
tblConstructionPhase	PhaseEndDate	3/3/2017	3/4/2017
tblConstructionPhase	PhaseEndDate	1/13/2017	1/15/2017
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	41.80	0.00
tblFireplaces	NumberWood	26.60	0.00
tblProjectCharacteristics	OperationalYear	2014	2020

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

2.0 Emissions Summary

2.1 Overall Construction

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					
2017	0.1323	1.4784	1.0332	1.3200e-003	0.2456	0.0719	0.3175	0.1135	0.0661	0.1796	0.0000	121.5482	121.5482	0.0364	0.0000	122.3133
Total	**0.1323**	**1.4784**	**1.0332**	**1.3200e-003**	**0.2456**	**0.0719**	**0.3175**	**0.1135**	**0.0661**	**0.1796**	**0.0000**	**121.5482**	**121.5482**	**0.0364**	**0.0000**	**122.3133**

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					
2017	0.0170	0.0593	0.7320	1.3200e-003	0.1125	1.0700e-003	0.1136	0.0516	1.0700e-003	0.0527	0.0000	121.5480	121.5480	0.0364	0.0000	122.3132
Total	**0.0170**	**0.0593**	**0.7320**	**1.3200e-003**	**0.1125**	**1.0700e-003**	**0.1136**	**0.0516**	**1.0700e-003**	**0.0527**	**0.0000**	**121.5480**	**121.5480**	**0.0364**	**0.0000**	**122.3132**

	ROG	**NOx**	**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	**87.16**	**95.99**	**29.16**	**0.00**	**54.21**	**98.51**	**64.24**	**54.55**	**98.38**	**70.68**	**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	7.9400e-003	3.0200e-003	0.2607	1.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**7.9400e-003**	**3.0200e-003**	**0.2607**	**1.0000e-005**	**0.0000**	**1.4300e-003**	**1.4300e-003**	**0.0000**	**1.4300e-003**	**1.4300e-003**	**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	7.9400e-003	3.0200e-003	0.2607	1.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**7.9400e-003**	**3.0200e-003**	**0.2607**	**1.0000e-005**	**0.0000**	**1.4300e-003**	**1.4300e-003**	**0.0000**	**1.4300e-003**	**1.4300e-003**	**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	1/2/2017	1/15/2017	5	10	
2	Grading	Grading	1/16/2017	3/4/2017	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 87.5

Acres of Paving: 0

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

OffRoad Equipment

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

Trips and VMT

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

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0242	0.2588	0.1970	2.0000e-004		0.0138	0.0138		0.0127	0.0127	0.0000	18.1577	18.1577	5.5600e-003	0.0000	18.2745
Total	**0.0242**	**0.2588**	**0.1970**	**2.0000e-004**	**0.0903**	**0.0138**	**0.1041**	**0.0497**	**0.0127**	**0.0623**	**0.0000**	**18.1577**	**18.1577**	**5.5600e-003**	**0.0000**	**18.2745**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	3.7000e-004	3.5000e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6466	0.6466	3.0000e-005	0.0000	0.6473
Total	**2.8000e-004**	**3.7000e-004**	**3.5000e-003**	**1.0000e-005**	**7.2000e-004**	**1.0000e-005**	**7.3000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.6466**	**0.6466**	**3.0000e-005**	**0.0000**	**0.6473**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0407	0.0000	0.0407	0.0223	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3800e-003	8.7600e-003	0.1062	2.0000e-004		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	18.1577	18.1577	5.5600e-003	0.0000	18.2745
Total	**2.3800e-003**	**8.7600e-003**	**0.1062**	**2.0000e-004**	**0.0407**	**1.6000e-004**	**0.0408**	**0.0223**	**1.6000e-004**	**0.0225**	**0.0000**	**18.1577**	**18.1577**	**5.5600e-003**	**0.0000**	**18.2745**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	3.7000e-004	3.5000e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6466	0.6466	3.0000e-005	0.0000	0.6473
Total	**2.8000e-004**	**3.7000e-004**	**3.5000e-003**	**1.0000e-005**	**7.2000e-004**	**1.0000e-005**	**7.3000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.6466**	**0.6466**	**3.0000e-005**	**0.0000**	**0.6473**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1518	0.0000	0.1518	0.0629	0.0000	0.0629	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1067	1.2179	0.8191	1.0800e-003		0.0581	0.0581		0.0534	0.0534	0.0000	100.2294	100.2294	0.0307	0.0000	100.8743
Total	**0.1067**	**1.2179**	**0.8191**	**1.0800e-003**	**0.1518**	**0.0581**	**0.2098**	**0.0629**	**0.0534**	**0.1164**	**0.0000**	**100.2294**	**100.2294**	**0.0307**	**0.0000**	**100.8743**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0900e-003	1.4400e-003	0.0136	3.0000e-005	2.8100e-003	2.0000e-005	2.8300e-003	7.5000e-004	2.0000e-005	7.7000e-004	0.0000	2.5145	2.5145	1.3000e-004	0.0000	2.5172
Total	**1.0900e-003**	**1.4400e-003**	**0.0136**	**3.0000e-005**	**2.8100e-003**	**2.0000e-005**	**2.8300e-003**	**7.5000e-004**	**2.0000e-005**	**7.7000e-004**	**0.0000**	**2.5145**	**2.5145**	**1.3000e-004**	**0.0000**	**2.5172**

3.3 Grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0683	0.0000	0.0683	0.0283	0.0000	0.0283	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0132	0.0488	0.6086	1.0800e-003		8.8000e-004	8.8000e-004		8.8000e-004	8.8000e-004	0.0000	100.2292	100.2292	0.0307	0.0000	100.8742
Total	**0.0132**	**0.0488**	**0.6086**	**1.0800e-003**	**0.0683**	**8.8000e-004**	**0.0692**	**0.0283**	**8.8000e-004**	**0.0292**	**0.0000**	**100.2292**	**100.2292**	**0.0307**	**0.0000**	**100.8742**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0900e-003	1.4400e-003	0.0136	3.0000e-005	2.8100e-003	2.0000e-005	2.8300e-003	7.5000e-004	2.0000e-005	7.7000e-004	0.0000	2.5145	2.5145	1.3000e-004	0.0000	2.5172
Total	**1.0900e-003**	**1.4400e-003**	**0.0136**	**3.0000e-005**	**2.8100e-003**	**2.0000e-005**	**2.8300e-003**	**7.5000e-004**	**2.0000e-005**	**7.7000e-004**	**0.0000**	**2.5145**	**2.5145**	**1.3000e-004**	**0.0000**	**2.5172**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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	7.9400e-003	3.0200e-003	0.2607	1.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003	0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Unmitigated	7.9400e-003	3.0200e-003	0.2607	1.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003	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	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.9400e-003	3.0200e-003	0.2607	1.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003	0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Total	**7.9400e-003**	**3.0200e-003**	**0.2607**	**1.0000e-005**		**1.4300e-003**	**1.4300e-003**		**1.4300e-003**	**1.4300e-003**	**0.0000**	**0.4245**	**0.4245**	**4.1000e-004**	**0.0000**	**0.4332**

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	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.9400e-003	3.0200e-003	0.2607	1.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003	0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Total	**7.9400e-003**	**3.0200e-003**	**0.2607**	**1.0000e-005**		**1.4300e-003**	**1.4300e-003**		**1.4300e-003**	**1.4300e-003**	**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**

7.2 Water by Land Use

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**

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	0.87	0.96	0.25	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.89	0.96	0.45	0.00	0.99	0.99	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

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

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

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

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

Fugitive Dust Mitigation

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

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

Operational Percent Reduction Summary

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

Operational Mobile Mitigation

Project Setting: Low Density Suburban

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

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

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

Area Mitigation

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

Energy Mitigation Measures

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

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

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

Solid Waste Mitigation

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

Valiano - Grading (Phase 4 - N 4)

San Diego County, 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	PhaseEndDate	9/29/2017	9/30/2017
tblConstructionPhase	PhaseEndDate	7/28/2017	7/29/2017
tblConstructionPhase	PhaseStartDate	7/30/2017	7/31/2017
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	37.95	0.00
tblFireplaces	NumberWood	24.15	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.21	0.00

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

2.0 Emissions Summary

2.1 Overall Construction

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					
2017	0.1876	2.0860	1.4716	1.8400e-003	0.3809	0.1022	0.4831	0.1816	0.0940	0.2756	0.0000	169.7079	169.7079	0.0508	0.0000	170.7755
Total	**0.1876**	**2.0860**	**1.4716**	**1.8400e-003**	**0.3809**	**0.1022**	**0.4831**	**0.1816**	**0.0940**	**0.2756**	**0.0000**	**169.7079**	**169.7079**	**0.0508**	**0.0000**	**170.7755**

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					
2017	0.0237	0.0828	1.0195	1.8400e-003	0.1742	1.4900e-003	0.1757	0.0825	1.4900e-003	0.0839	0.0000	169.7077	169.7077	0.0508	0.0000	170.7753
Total	**0.0237**	**0.0828**	**1.0195**	**1.8400e-003**	**0.1742**	**1.4900e-003**	**0.1757**	**0.0825**	**1.4900e-003**	**0.0839**	**0.0000**	**169.7077**	**169.7077**	**0.0508**	**0.0000**	**170.7753**

	ROG	**NOx**	**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	**87.35**	**96.03**	**30.72**	**0.00**	**54.27**	**98.54**	**63.64**	**54.59**	**98.42**	**69.55**	**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	0.0172	6.5500e-003	0.5662	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**0.0172**	**6.5500e-003**	**0.5662**	**3.0000e-005**	**0.0000**	**3.1100e-003**	**3.1100e-003**	**0.0000**	**3.1100e-003**	**3.1100e-003**	**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	0.0172	6.5500e-003	0.5662	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**0.0172**	**6.5500e-003**	**0.5662**	**3.0000e-005**	**0.0000**	**3.1100e-003**	**3.1100e-003**	**0.0000**	**3.1100e-003**	**3.1100e-003**	**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	7/3/2017	7/29/2017	5	20	
2	Grading	Grading	7/31/2017	9/30/2017	5	45	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

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

OffRoad Equipment

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

Trips and VMT

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

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0484	0.5175	0.3940	3.9000e-004		0.0275	0.0275		0.0253	0.0253	0.0000	36.3154	36.3154	0.0111	0.0000	36.5491
Total	**0.0484**	**0.5175**	**0.3940**	**3.9000e-004**	**0.1807**	**0.0275**	**0.2082**	**0.0993**	**0.0253**	**0.1247**	**0.0000**	**36.3154**	**36.3154**	**0.0111**	**0.0000**	**36.5491**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	7.4000e-004	7.0100e-003	2.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2932	1.2932	7.0000e-005	0.0000	1.2946
Total	**5.6000e-004**	**7.4000e-004**	**7.0100e-003**	**2.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4500e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.2932**	**1.2932**	**7.0000e-005**	**0.0000**	**1.2946**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0813	0.0000	0.0813	0.0447	0.0000	0.0447	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7600e-003	0.0175	0.2124	3.9000e-004		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	36.3153	36.3153	0.0111	0.0000	36.5490
Total	**4.7600e-003**	**0.0175**	**0.2124**	**3.9000e-004**	**0.0813**	**3.2000e-004**	**0.0816**	**0.0447**	**3.2000e-004**	**0.0450**	**0.0000**	**36.3153**	**36.3153**	**0.0111**	**0.0000**	**36.5490**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	7.4000e-004	7.0100e-003	2.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2932	1.2932	7.0000e-005	0.0000	1.2946
Total	**5.6000e-004**	**7.4000e-004**	**7.0100e-003**	**2.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4500e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.2932**	**1.2932**	**7.0000e-005**	**0.0000**	**1.2946**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1952	0.0000	0.1952	0.0809	0.0000	0.0809	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1372	1.5658	1.0531	1.3900e-003		0.0746	0.0746		0.0687	0.0687	0.0000	128.8663	128.8663	0.0395	0.0000	129.6955
Total	**0.1372**	**1.5658**	**1.0531**	**1.3900e-003**	**0.1952**	**0.0746**	**0.2698**	**0.0809**	**0.0687**	**0.1496**	**0.0000**	**128.8663**	**128.8663**	**0.0395**	**0.0000**	**129.6955**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-003	1.8500e-003	0.0175	4.0000e-005	3.6100e-003	3.0000e-005	3.6400e-003	9.6000e-004	2.0000e-005	9.8000e-004	0.0000	3.2330	3.2330	1.6000e-004	0.0000	3.2364
Total	**1.4000e-003**	**1.8500e-003**	**0.0175**	**4.0000e-005**	**3.6100e-003**	**3.0000e-005**	**3.6400e-003**	**9.6000e-004**	**2.0000e-005**	**9.8000e-004**	**0.0000**	**3.2330**	**3.2330**	**1.6000e-004**	**0.0000**	**3.2364**

3.3 Grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0878	0.0000	0.0878	0.0364	0.0000	0.0364	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0170	0.0627	0.7825	1.3900e-003		1.1300e-003	1.1300e-003		1.1300e-003	1.1300e-003	0.0000	128.8662	128.8662	0.0395	0.0000	129.6953
Total	**0.0170**	**0.0627**	**0.7825**	**1.3900e-003**	**0.0878**	**1.1300e-003**	**0.0890**	**0.0364**	**1.1300e-003**	**0.0375**	**0.0000**	**128.8662**	**128.8662**	**0.0395**	**0.0000**	**129.6953**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-003	1.8500e-003	0.0175	4.0000e-005	3.6100e-003	3.0000e-005	3.6400e-003	9.6000e-004	2.0000e-005	9.8000e-004	0.0000	3.2330	3.2330	1.6000e-004	0.0000	3.2364
Total	**1.4000e-003**	**1.8500e-003**	**0.0175**	**4.0000e-005**	**3.6100e-003**	**3.0000e-005**	**3.6400e-003**	**9.6000e-004**	**2.0000e-005**	**9.8000e-004**	**0.0000**	**3.2330**	**3.2330**	**1.6000e-004**	**0.0000**	**3.2364**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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	0.0172	6.5500e-003	0.5662	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Unmitigated	0.0172	6.5500e-003	0.5662	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	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	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0172	6.5500e-003	0.5662	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Total	**0.0172**	**6.5500e-003**	**0.5662**	**3.0000e-005**		**3.1100e-003**	**3.1100e-003**		**3.1100e-003**	**3.1100e-003**	**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	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0172	6.5500e-003	0.5662	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Total	**0.0172**	**6.5500e-003**	**0.5662**	**3.0000e-005**		**3.1100e-003**	**3.1100e-003**		**3.1100e-003**	**3.1100e-003**	**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	0.87	0.96	0.25	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.89	0.96	0.45	0.00	0.99	0.99	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

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

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

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

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

Fugitive Dust Mitigation

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

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

Operational Percent Reduction Summary

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

Operational Mobile Mitigation

Project Setting: Low Density Suburban

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

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

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

Area Mitigation

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

Energy Mitigation Measures

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

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

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

Solid Waste Mitigation

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

Valiano - Backbone Infrastructure (Phase 1 - N 1 & 5)

San Diego County, 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
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	84.70	0.00
tblFireplaces	NumberWood	53.90	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.09	0.00
tblSolidWaste	SolidWasteGenerationRate	180.40	0.00
tblVehicleTrips	ST_TR	1.59	0.00

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

2.0 Emissions Summary

2.1 Overall Construction

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					
2016	0.1563	1.6336	0.9147	1.7900e-003	5.1700e-003	0.0836	0.0888	1.3700e-003	0.0769	0.0783	0.0000	167.5787	167.5787	0.0494	0.0000	168.6150
Total	**0.1563**	**1.6336**	**0.9147**	**1.7900e-003**	**5.1700e-003**	**0.0836**	**0.0888**	**1.3700e-003**	**0.0769**	**0.0783**	**0.0000**	**167.5787**	**167.5787**	**0.0494**	**0.0000**	**168.6150**

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					
2016	0.0234	0.0808	0.9854	1.7900e-003	5.1700e-003	1.4500e-003	6.6200e-003	1.3700e-003	1.4500e-003	2.8200e-003	0.0000	167.5785	167.5785	0.0494	0.0000	168.6149
Total	**0.0234**	**0.0808**	**0.9854**	**1.7900e-003**	**5.1700e-003**	**1.4500e-003**	**6.6200e-003**	**1.3700e-003**	**1.4500e-003**	**2.8200e-003**	**0.0000**	**167.5785**	**167.5785**	**0.0494**	**0.0000**	**168.6149**

	ROG	**NOx**	**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	**85.06**	**95.06**	**-7.73**	**0.00**	**0.00**	**98.27**	**92.55**	**0.00**	**98.12**	**96.40**	**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	0.0374	0.0142	1.2292	6.0000e-005		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**0.0374**	**0.0142**	**1.2292**	**6.0000e-005**	**0.0000**	**6.7600e-003**	**6.7600e-003**	**0.0000**	**6.7600e-003**	**6.7600e-003**	**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	0.0374	0.0142	1.2292	6.0000e-005		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**0.0374**	**0.0142**	**1.2292**	**6.0000e-005**	**0.0000**	**6.7600e-003**	**6.7600e-003**	**0.0000**	**6.7600e-003**	**6.7600e-003**	**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	7/6/2016	11/2/2016	5	86	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

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

Trips and VMT

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

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

3.2 Backbone Infrastructure - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1541	1.6306	0.8869	1.7300e-003		0.0836	0.0836		0.0769	0.0769	0.0000	162.7586	162.7586	0.0491	0.0000	163.7895
Total	**0.1541**	**1.6306**	**0.8869**	**1.7300e-003**		**0.0836**	**0.0836**		**0.0769**	**0.0769**	**0.0000**	**162.7586**	**162.7586**	**0.0491**	**0.0000**	**163.7895**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2100e-003	2.9200e-003	0.0279	6.0000e-005	5.1700e-003	4.0000e-005	5.2100e-003	1.3700e-003	4.0000e-005	1.4100e-003	0.0000	4.8202	4.8202	2.5000e-004	0.0000	4.8255
Total	**2.2100e-003**	**2.9200e-003**	**0.0279**	**6.0000e-005**	**5.1700e-003**	**4.0000e-005**	**5.2100e-003**	**1.3700e-003**	**4.0000e-005**	**1.4100e-003**	**0.0000**	**4.8202**	**4.8202**	**2.5000e-004**	**0.0000**	**4.8255**

3.2 Backbone Infrastructure - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0211	0.0779	0.9576	1.7300e-003		1.4100e-003	1.4100e-003		1.4100e-003	1.4100e-003	0.0000	162.7584	162.7584	0.0491	0.0000	163.7894
Total	**0.0211**	**0.0779**	**0.9576**	**1.7300e-003**		**1.4100e-003**	**1.4100e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**162.7584**	**162.7584**	**0.0491**	**0.0000**	**163.7894**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2100e-003	2.9200e-003	0.0279	6.0000e-005	5.1700e-003	4.0000e-005	5.2100e-003	1.3700e-003	4.0000e-005	1.4100e-003	0.0000	4.8202	4.8202	2.5000e-004	0.0000	4.8255
Total	**2.2100e-003**	**2.9200e-003**	**0.0279**	**6.0000e-005**	**5.1700e-003**	**4.0000e-005**	**5.2100e-003**	**1.3700e-003**	**4.0000e-005**	**1.4100e-003**	**0.0000**	**4.8202**	**4.8202**	**2.5000e-004**	**0.0000**	**4.8255**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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	0.0374	0.0142	1.2292	6.0000e-005		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Unmitigated	0.0374	0.0142	1.2292	6.0000e-005		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	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	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0374	0.0142	1.2292	6.0000e-005		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Total	**0.0374**	**0.0142**	**1.2292**	**6.0000e-005**		**6.7600e-003**	**6.7600e-003**		**6.7600e-003**	**6.7600e-003**	**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	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0374	0.0142	1.2292	6.0000e-005		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Total	**0.0374**	**0.0142**	**1.2292**	**6.0000e-005**		**6.7600e-003**	**6.7600e-003**		**6.7600e-003**	**6.7600e-003**	**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			
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 1 - N 1 & 5)

San Diego County, Mitigation Report

Construction Mitigation Summary

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

OFFROAD Equipment Mitigation

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

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

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

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

Fugitive Dust Mitigation

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

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Backbone Infrastructure	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Backbone Infrastructure	Roads	0.01	0.00	0.01	0.00	0.00	0.00

Operational Percent Reduction Summary

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

Operational Mobile Mitigation

Project Setting:

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

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

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

Area Mitigation

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

Energy Mitigation Measures

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

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

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

Solid Waste Mitigation

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

Valiano - Backbone Infrastructure (Phase 2 - N 2 & 3)

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	93.00	Dwelling Unit	30.19	167,400.00	266

1.2 Other Project Characteristics

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

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

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

Off-road Equipment -

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

Vehicle Trips - Construction only.

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	Area_Residential_Exterior	134865	156735
tblAreaCoating	Area_Residential_Interior	404595	470205
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	4/28/2017	4/29/2017
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	61.05	0.00
tblFireplaces	NumberWood	38.85	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	129.97	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	7,232,096.84	0.00
tblWater	OutdoorWaterUseRate	4,559,365.40	0.00
tblWoodstoves	NumberCatalytic	5.55	0.00
tblWoodstoves	NumberNoncatalytic	5.55	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

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					
2017	0.1427	1.4705	0.8647	1.7700e-003	5.1100e-003	0.0748	0.0799	1.3600e-003	0.0688	0.0702	0.0000	162.8283	162.8283	0.0487	0.0000	163.8514
Total	**0.1427**	**1.4705**	**0.8647**	**1.7700e-003**	**5.1100e-003**	**0.0748**	**0.0799**	**1.3600e-003**	**0.0688**	**0.0702**	**0.0000**	**162.8283**	**162.8283**	**0.0487**	**0.0000**	**163.8514**

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					
2017	0.0229	0.0796	0.9712	1.7700e-003	5.1100e-003	1.4300e-003	6.5400e-003	1.3600e-003	1.4300e-003	2.7900e-003	0.0000	162.8281	162.8281	0.0487	0.0000	163.8512
Total	**0.0229**	**0.0796**	**0.9712**	**1.7700e-003**	**5.1100e-003**	**1.4300e-003**	**6.5400e-003**	**1.3600e-003**	**1.4300e-003**	**2.7900e-003**	**0.0000**	**162.8281**	**162.8281**	**0.0487**	**0.0000**	**163.8512**

	ROG	**NOx**	**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	**83.98**	**94.59**	**-12.32**	**0.00**	**0.00**	**98.09**	**91.82**	**0.00**	**97.92**	**96.02**	**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	0.0211	8.0100e-003	0.6928	4.0000e-005		3.8100e-003	3.8100e-003		3.8100e-003	3.8100e-003	0.0000	1.1280	1.1280	1.1000e-003	0.0000	1.1511
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**0.0211**	**8.0100e-003**	**0.6928**	**4.0000e-005**	**0.0000**	**3.8100e-003**	**3.8100e-003**	**0.0000**	**3.8100e-003**	**3.8100e-003**	**0.0000**	**1.1280**	**1.1280**	**1.1000e-003**	**0.0000**	**1.1511**

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	0.0211	8.0100e-003	0.6928	4.0000e-005		3.8100e-003	3.8100e-003		3.8100e-003	3.8100e-003	0.0000	1.1280	1.1280	1.1000e-003	0.0000	1.1511
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**0.0211**	**8.0100e-003**	**0.6928**	**4.0000e-005**	**0.0000**	**3.8100e-003**	**3.8100e-003**	**0.0000**	**3.8100e-003**	**3.8100e-003**	**0.0000**	**1.1280**	**1.1280**	**1.1000e-003**	**0.0000**	**1.1511**

	ROG	NOx	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	1/1/2017	4/29/2017	5	85	Neighborhoods 2 and 3

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

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

Trips and VMT

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

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Backbone Infrastructure - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1408	1.4679	0.8399	1.7100e-003		0.0748	0.0748		0.0688	0.0688	0.0000	158.2482	158.2482	0.0485	0.0000	159.2665
Total	**0.1408**	**1.4679**	**0.8399**	**1.7100e-003**		**0.0748**	**0.0748**		**0.0688**	**0.0688**	**0.0000**	**158.2482**	**158.2482**	**0.0485**	**0.0000**	**159.2665**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9800e-003	2.6200e-003	0.0248	6.0000e-005	5.1100e-003	4.0000e-005	5.1500e-003	1.3600e-003	4.0000e-005	1.3900e-003	0.0000	4.5800	4.5800	2.3000e-004	0.0000	4.5849
Total	**1.9800e-003**	**2.6200e-003**	**0.0248**	**6.0000e-005**	**5.1100e-003**	**4.0000e-005**	**5.1500e-003**	**1.3600e-003**	**4.0000e-005**	**1.3900e-003**	**0.0000**	**4.5800**	**4.5800**	**2.3000e-004**	**0.0000**	**4.5849**

3.2 Backbone Infrastructure - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0209	0.0770	0.9464	1.7100e-003		1.3900e-003	1.3900e-003		1.3900e-003	1.3900e-003	0.0000	158.2480	158.2480	0.0485	0.0000	159.2663
Total	**0.0209**	**0.0770**	**0.9464**	**1.7100e-003**		**1.3900e-003**	**1.3900e-003**		**1.3900e-003**	**1.3900e-003**	**0.0000**	**158.2480**	**158.2480**	**0.0485**	**0.0000**	**159.2663**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9800e-003	2.6200e-003	0.0248	6.0000e-005	5.1100e-003	4.0000e-005	5.1500e-003	1.3600e-003	4.0000e-005	1.3900e-003	0.0000	4.5800	4.5800	2.3000e-004	0.0000	4.5849
Total	**1.9800e-003**	**2.6200e-003**	**0.0248**	**6.0000e-005**	**5.1100e-003**	**4.0000e-005**	**5.1500e-003**	**1.3600e-003**	**4.0000e-005**	**1.3900e-003**	**0.0000**	**4.5800**	**4.5800**	**2.3000e-004**	**0.0000**	**4.5849**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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	0.0211	8.0100e-003	0.6928	4.0000e-005		3.8100e-003	3.8100e-003		3.8100e-003	3.8100e-003	0.0000	1.1280	1.1280	1.1000e-003	0.0000	1.1511
Unmitigated	0.0211	8.0100e-003	0.6928	4.0000e-005		3.8100e-003	3.8100e-003		3.8100e-003	3.8100e-003	0.0000	1.1280	1.1280	1.1000e-003	0.0000	1.1511

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	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0211	8.0100e-003	0.6928	4.0000e-005		3.8100e-003	3.8100e-003		3.8100e-003	3.8100e-003	0.0000	1.1280	1.1280	1.1000e-003	0.0000	1.1511
Total	**0.0211**	**8.0100e-003**	**0.6928**	**4.0000e-005**		**3.8100e-003**	**3.8100e-003**		**3.8100e-003**	**3.8100e-003**	**0.0000**	**1.1280**	**1.1280**	**1.1000e-003**	**0.0000**	**1.1511**

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					
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0211	8.0100e-003	0.6928	4.0000e-005		3.8100e-003	3.8100e-003		3.8100e-003	3.8100e-003	0.0000	1.1280	1.1280	1.1000e-003	0.0000	1.1511
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0211**	**8.0100e-003**	**0.6928**	**4.0000e-005**		**3.8100e-003**	**3.8100e-003**		**3.8100e-003**	**3.8100e-003**	**0.0000**	**1.1280**	**1.1280**	**1.1000e-003**	**0.0000**	**1.1511**

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**

7.2 Water by Land Use

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**

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 & 3)

San Diego County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Backbone Infrastructure	0.84	0.95	-0.12	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

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

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Forklifts	8.96000E-003	7.76200E-002	5.30900E-002	6.00000E-005	6.40000E-003	5.89000E-003	0.00000E+000	6.02446E+000	6.02446E+000	1.85000E-003	0.00000E+000	6.06322E+000
Off-Highway Trucks	7.41200E-002	8.35920E-001	3.98260E-001	1.12000E-003	3.10300E-002	2.85500E-002	0.00000E+000	1.03657E+002	1.03657E+002	3.17600E-002	0.00000E+000	1.04324E+002
Other Material Handling Equipment	2.13700E-002	2.24730E-001	1.67800E-001	2.40000E-004	1.19100E-002	1.09600E-002	0.00000E+000	2.26418E+001	2.26418E+001	6.94000E-003	0.00000E+000	2.27875E+001
Tractors/Loaders/ Backhoes	1.34600E-002	1.29360E-001	1.01740E-001	1.30000E-004	9.73000E-003	8.95000E-003	0.00000E+000	1.22708E+001	1.22708E+001	3.76000E-003	0.00000E+000	1.23498E+001
Trenchers	2.28300E-002	2.00250E-001	1.18980E-001	1.50000E-004	1.56900E-002	1.44300E-002	0.00000E+000	1.36542E+001	1.36542E+001	4.18000E-003	0.00000E+000	1.37420E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Forklifts	8.00000E-004	2.95000E-003	4.93700E-002	6.00000E-005	5.00000E-005	5.00000E-005	0.00000E+000	6.02445E+000	6.02445E+000	1.85000E-003	0.00000E+000	6.06321E+000
Off-Highway Trucks	1.36700E-002	5.03600E-002	5.01310E-001	1.12000E-003	9.10000E-004	9.10000E-004	0.00000E+000	1.03657E+002	1.03657E+002	3.17600E-002	0.00000E+000	1.04324E+002
Other Material Handling Equipment	3.00000E-003	1.10700E-002	1.85260E-001	2.40000E-004	2.00000E-004	2.00000E-004	0.00000E+000	2.26417E+001	2.26417E+001	6.94000E-003	0.00000E+000	2.27874E+001
Tractors/Loaders/Backhoes	1.61000E-003	5.95000E-003	9.95400E-002	1.30000E-004	1.10000E-004	1.10000E-004	0.00000E+000	1.22708E+001	1.22708E+001	3.76000E-003	0.00000E+000	1.23498E+001
Trenchers	1.80000E-003	6.63000E-003	1.10940E-001	1.50000E-004	1.20000E-004	1.20000E-004	0.00000E+000	1.36542E+001	1.36542E+001	4.18000E-003	0.00000E+000	1.37420E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Percent Reduction											
Forklifts	9.10714E-001	9.61994E-001	7.00697E-002	0.00000E+000	9.92188E-001	9.91511E-001	0.00000E+000	1.65990E-006	1.65990E-006	0.00000E+000	0.00000E+000	1.64929E-006
Off-Highway Trucks	8.15569E-001	9.39755E-001	-2.58751E-001	0.00000E+000	9.70674E-001	9.68126E-001	0.00000E+000	1.15766E-006	1.15766E-006	0.00000E+000	0.00000E+000	1.15026E-006
Other Material Handling Equipment	8.59616E-001	9.50741E-001	-1.04052E-001	0.00000E+000	9.83207E-001	9.81752E-001	0.00000E+000	1.32499E-006	1.32499E-006	0.00000E+000	0.00000E+000	1.31651E-006
Tractors/Loaders/Backhoes	8.80386E-001	9.54004E-001	2.16237E-002	0.00000E+000	9.88695E-001	9.87709E-001	0.00000E+000	1.62988E-006	1.62988E-006	0.00000E+000	0.00000E+000	8.09732E-007
Trenchers	9.21156E-001	9.66891E-001	6.75744E-002	0.00000E+000	9.92352E-001	9.91684E-001	0.00000E+000	7.32377E-007	7.32377E-007	0.00000E+000	0.00000E+000	1.45539E-006

Fugitive Dust Mitigation

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

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Backbone Infrastructure	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Backbone Infrastructure	Roads	0.01	0.00	0.01	0.00	0.00	0.00

Operational Percent Reduction Summary

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

Operational Mobile Mitigation

Project Setting:

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

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

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

Area Mitigation

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

Energy Mitigation Measures

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

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

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

Solid Waste Mitigation

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

Valiano - Backbone Infrastructure (Phase 3 - N 4)

San Diego County, 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	37.95	0.00
tblFireplaces	NumberWood	24.15	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblOffRoadEquipment	PhaseName		Backbone Infrastructure
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.21	0.00
tblSolidWaste	SolidWasteGenerationRate	80.77	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	4,495,627.77	0.00
tblWater	OutdoorWaterUseRate	2,978,703.37	0.00
tblWater	OutdoorWaterUseRate	2,834,200.11	0.00
tblWoodstoves	NumberCatalytic	3.45	0.00
tblWoodstoves	NumberNoncatalytic	3.45	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

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	0.1236	1.2439	0.8148	1.7900e-003	5.1700e-003	0.0618	0.0670	1.3700e-003	0.0569	0.0583	0.0000	162.0113	162.0113	0.0493	0.0000	163.0459
Total	**0.1236**	**1.2439**	**0.8148**	**1.7900e-003**	**5.1700e-003**	**0.0618**	**0.0670**	**1.3700e-003**	**0.0569**	**0.0583**	**0.0000**	**162.0113**	**162.0113**	**0.0493**	**0.0000**	**163.0459**

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	0.0230	0.0803	0.9803	1.7900e-003	5.1700e-003	1.4500e-003	6.6200e-003	1.3700e-003	1.4400e-003	2.8200e-003	0.0000	162.0111	162.0111	0.0493	0.0000	163.0457
Total	**0.0230**	**0.0803**	**0.9803**	**1.7900e-003**	**5.1700e-003**	**1.4500e-003**	**6.6200e-003**	**1.3700e-003**	**1.4400e-003**	**2.8200e-003**	**0.0000**	**162.0111**	**162.0111**	**0.0493**	**0.0000**	**163.0457**

	ROG	**NOx**	**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	**81.42**	**93.55**	**-20.31**	**0.00**	**0.00**	**97.66**	**90.12**	**0.00**	**97.47**	**95.16**	**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	0.0172	6.5500e-003	0.5662	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**0.0172**	**6.5500e-003**	**0.5662**	**3.0000e-005**	**0.0000**	**3.1100e-003**	**3.1100e-003**	**0.0000**	**3.1100e-003**	**3.1100e-003**	**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	0.0172	6.5500e-003	0.5662	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**0.0172**	**6.5500e-003**	**0.5662**	**3.0000e-005**	**0.0000**	**3.1100e-003**	**3.1100e-003**	**0.0000**	**3.1100e-003**	**3.1100e-003**	**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	1/2/2018	5/1/2018	5	86	Neighborhood 4

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

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

Trips and VMT

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

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Backbone Infrastructure - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1218	1.2414	0.7921	1.7300e-003		0.0618	0.0618		0.0569	0.0569	0.0000	157.5514	157.5514	0.0491	0.0000	158.5814
Total	**0.1218**	**1.2414**	**0.7921**	**1.7300e-003**		**0.0618**	**0.0618**		**0.0569**	**0.0569**	**0.0000**	**157.5514**	**157.5514**	**0.0491**	**0.0000**	**158.5814**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8200e-003	2.4200e-003	0.0227	6.0000e-005	5.1700e-003	4.0000e-005	5.2100e-003	1.3700e-003	3.0000e-005	1.4100e-003	0.0000	4.4599	4.4599	2.2000e-004	0.0000	4.4645
Total	**1.8200e-003**	**2.4200e-003**	**0.0227**	**6.0000e-005**	**5.1700e-003**	**4.0000e-005**	**5.2100e-003**	**1.3700e-003**	**3.0000e-005**	**1.4100e-003**	**0.0000**	**4.4599**	**4.4599**	**2.2000e-004**	**0.0000**	**4.4645**

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	0.0211	0.0779	0.9576	1.7300e-003		1.4100e-003	1.4100e-003		1.4100e-003	1.4100e-003	0.0000	157.5512	157.5512	0.0491	0.0000	158.5812
Total	**0.0211**	**0.0779**	**0.9576**	**1.7300e-003**		**1.4100e-003**	**1.4100e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**157.5512**	**157.5512**	**0.0491**	**0.0000**	**158.5812**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8200e-003	2.4200e-003	0.0227	6.0000e-005	5.1700e-003	4.0000e-005	5.2100e-003	1.3700e-003	3.0000e-005	1.4100e-003	0.0000	4.4599	4.4599	2.2000e-004	0.0000	4.4645
Total	**1.8200e-003**	**2.4200e-003**	**0.0227**	**6.0000e-005**	**5.1700e-003**	**4.0000e-005**	**5.2100e-003**	**1.3700e-003**	**3.0000e-005**	**1.4100e-003**	**0.0000**	**4.4599**	**4.4599**	**2.2000e-004**	**0.0000**	**4.4645**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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	0.0172	6.5500e-003	0.5662	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Unmitigated	0.0172	6.5500e-003	0.5662	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	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	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0172	6.5500e-003	0.5662	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Total	**0.0172**	**6.5500e-003**	**0.5662**	**3.0000e-005**		**3.1100e-003**	**3.1100e-003**		**3.1100e-003**	**3.1100e-003**	**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	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0172	6.5500e-003	0.5662	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Total	**0.0172**	**6.5500e-003**	**0.5662**	**3.0000e-005**		**3.1100e-003**	**3.1100e-003**		**3.1100e-003**	**3.1100e-003**	**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 3 - N 4)

San Diego County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Backbone Infrastructure	0.81	0.94	-0.20	0.00	0.98	0.97	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

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

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Forklifts	7.66000E-003	6.77000E-002	5.20800E-002	7.00000E-005	5.40000E-003	4.97000E-003	0.00000E+000	5.99909E+000	5.99909E+000	1.87000E-003	0.00000E+000	6.03831E+000
Off-Highway Trucks	6.61700E-002	7.12390E-001	3.59540E-001	1.13000E-003	2.60000E-002	2.39200E-002	0.00000E+000	1.03218E+002	1.03218E+002	3.21300E-002	0.00000E+000	1.03893E+002
Other Material Handling Equipment	1.65400E-002	1.68820E-001	1.63030E-001	2.50000E-004	8.74000E-003	8.04000E-003	0.00000E+000	2.25464E+001	2.25464E+001	7.02000E-003	0.00000E+000	2.26938E+001
Tractors/Loaders/ Backhoes	1.14400E-002	1.13080E-001	1.00480E-001	1.30000E-004	8.01000E-003	7.37000E-003	0.00000E+000	1.22011E+001	1.22011E+001	3.80000E-003	0.00000E+000	1.22808E+001
Trenchers	1.99600E-002	1.79440E-001	1.16940E-001	1.50000E-004	1.36500E-002	1.25600E-002	0.00000E+000	1.35870E+001	1.35870E+001	4.23000E-003	0.00000E+000	1.36759E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Forklifts	8.10000E-004	2.98000E-003	4.99500E-002	7.00000E-005	5.00000E-005	5.00000E-005	0.00000E+000	5.99908E+000	5.99908E+000	1.87000E-003	0.00000E+000	6.03830E+000
Off-Highway Trucks	1.38300E-002	5.09500E-002	5.07210E-001	1.13000E-003	9.20000E-004	9.20000E-004	0.00000E+000	1.03218E+002	1.03218E+002	3.21300E-002	0.00000E+000	1.03892E+002
Other Material Handling Equipment	3.04000E-003	1.12000E-002	1.87440E-001	2.50000E-004	2.00000E-004	2.00000E-004	0.00000E+000	2.25464E+001	2.25464E+001	7.02000E-003	0.00000E+000	2.26938E+001
Tractors/Loaders/Backhoes	1.63000E-003	6.02000E-003	1.00710E-001	1.30000E-004	1.10000E-004	1.10000E-004	0.00000E+000	1.22011E+001	1.22011E+001	3.80000E-003	0.00000E+000	1.22808E+001
Trenchers	1.82000E-003	6.70000E-003	1.12240E-001	1.50000E-004	1.20000E-004	1.20000E-004	0.00000E+000	1.35870E+001	1.35870E+001	4.23000E-003	0.00000E+000	1.36759E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Percent Reduction											
Forklifts	8.94256E-001	9.55982E-001	4.08986E-002	0.00000E+000	9.90741E-001	9.89940E-001	0.00000E+000	1.66692E-006	1.66692E-006	0.00000E+000	0.00000E+000	1.65609E-006
Off-Highway Trucks	7.90993E-001	9.28480E-001	-4.10719E-001	0.00000E+000	9.64615E-001	9.61538E-001	0.00000E+000	1.16259E-006	1.16259E-006	0.00000E+000	0.00000E+000	1.25129E-006
Other Material Handling Equipment	8.16203E-001	9.33657E-001	-1.49727E-001	0.00000E+000	9.77117E-001	9.75124E-001	0.00000E+000	1.33059E-006	1.33059E-006	0.00000E+000	0.00000E+000	1.32195E-006
Tractors/Loaders/Backhoes	8.57517E-001	9.46763E-001	-2.28901E-003	0.00000E+000	9.86267E-001	9.85075E-001	0.00000E+000	8.19601E-007	8.19601E-007	0.00000E+000	0.00000E+000	1.62855E-006
Trenchers	9.08818E-001	9.62662E-001	4.01916E-002	0.00000E+000	9.91209E-001	9.90446E-001	0.00000E+000	1.47199E-006	1.47199E-006	0.00000E+000	0.00000E+000	7.31215E-007

Fugitive Dust Mitigation

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

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Backbone Infrastructure	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Backbone Infrastructure	Roads	0.01	0.00	0.01	0.00	0.00	0.00

Operational Percent Reduction Summary

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

Operational Mobile Mitigation

Project Setting:

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

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

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

Area Mitigation

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

Energy Mitigation Measures

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

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

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

Solid Waste Mitigation

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

Valiano - Vertical Development (Phase 1 - N 1 & 5)

San Diego County, 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 -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	ReapplicationRatePercent	10	0

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	75.00	181.00
tblConstructionPhase	NumDays	1,110.00	246.00
tblConstructionPhase	NumDays	75.00	246.00
tblConstructionPhase	PhaseEndDate	6/21/2018	10/11/2017
tblConstructionPhase	PhaseEndDate	9/20/2018	10/11/2017
tblConstructionPhase	PhaseStartDate	10/12/2017	2/1/2017
tblConstructionPhase	PhaseStartDate	10/12/2017	11/2/2016
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	84.70	0.00
tblFireplaces	NumberWood	53.90	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	9.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	9.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00

tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.09	0.00
tblSolidWaste	SolidWasteGenerationRate	180.40	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	10,033,719.95	0.00
tblWater	OutdoorWaterUseRate	1,191,481.35	0.00
tblWater	OutdoorWaterUseRate	6,325,606.05	0.00
tblWoodstoves	NumberCatalytic	7.70	0.00
tblWoodstoves	NumberNoncatalytic	7.70	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

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					
2016	0.2771	2.3790	1.6655	2.5200e-003	0.0187	0.1549	0.1736	5.0400e-003	0.1450	0.1500	0.0000	226.8011	226.8011	0.0532	0.0000	227.9185
2017	3.4653	10.5539	7.9037	0.0123	0.0992	0.6773	0.7765	0.0267	0.6348	0.6615	0.0000	1,088.6793	1,088.6793	0.2505	0.0000	1,093.9388
Total	**3.7423**	**12.9329**	**9.5693**	**0.0148**	**0.1179**	**0.8322**	**0.9500**	**0.0317**	**0.7797**	**0.8115**	**0.0000**	**1,315.4804**	**1,315.4804**	**0.3037**	**0.0000**	**1,321.8572**

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					
2016	0.0394	0.2030	1.6402	2.5200e-003	0.0187	2.5600e-003	0.0213	5.0400e-003	2.4900e-003	7.5300e-003	0.0000	226.8009	226.8009	0.0532	0.0000	227.9182
2017	2.4269	0.9450	7.9052	0.0123	0.0992	0.0119	0.1111	0.0267	0.0116	0.0383	0.0000	1,088.6782	1,088.6782	0.2505	0.0000	1,093.9376
Total	**2.4663**	**1.1480**	**9.5454**	**0.0148**	**0.1179**	**0.0144**	**0.1323**	**0.0317**	**0.0141**	**0.0458**	**0.0000**	**1,315.4790**	**1,315.4790**	**0.3037**	**0.0000**	**1,321.8558**

	ROG	**NOx**	**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	**34.10**	**91.12**	**0.25**	**0.00**	**0.00**	**98.26**	**86.07**	**0.00**	**98.19**	**94.36**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0374	0.0142	1.2292	6.0000e-005		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**0.0374**	**0.0142**	**1.2292**	**6.0000e-005**	**0.0000**	**6.7600e-003**	**6.7600e-003**	**0.0000**	**6.7600e-003**	**6.7600e-003**	**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	0.0374	0.0142	1.2292	6.0000e-005		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**0.0374**	**0.0142**	**1.2292**	**6.0000e-005**	**0.0000**	**6.7600e-003**	**6.7600e-003**	**0.0000**	**6.7600e-003**	**6.7600e-003**	**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	11/2/2016	10/11/2017	5	246	
2	Paving	Paving	11/2/2016	10/11/2017	5	246	
3	Architectural Coating	Architectural Coating	2/1/2017	10/11/2017	5	181	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 561,330; Residential Outdoor: 187,110; Non-Residential Indoor: 65,340; Non-Residential Outdoor: 21,780 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	3	7.00	226	0.29
Building Construction	Forklifts	9	8.00	89	0.20
Building Construction	Generator Sets	3	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	9	7.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	27	74.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2197	1.8387	1.1937	1.7300e-003		0.1269	0.1269		0.1192	0.1192	0.0000	156.1891	156.1891	0.0387	0.0000	157.0026
Total	**0.2197**	**1.8387**	**1.1937**	**1.7300e-003**		**0.1269**	**0.1269**		**0.1192**	**0.1192**	**0.0000**	**156.1891**	**156.1891**	**0.0387**	**0.0000**	**157.0026**

3.2 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.8700e-003	0.0504	0.0706	1.2000e-004	3.3600e-003	7.4000e-004	4.1000e-003	9.6000e-004	6.8000e-004	1.6400e-003	0.0000	11.1325	11.1325	9.0000e-005	0.0000	11.1344
Worker	5.4600e-003	7.2100e-003	0.0687	1.6000e-004	0.0128	1.0000e-004	0.0129	3.3900e-003	9.0000e-005	3.4800e-003	0.0000	11.8897	11.8897	6.3000e-004	0.0000	11.9029
Total	**0.0113**	**0.0576**	**0.1394**	**2.8000e-004**	**0.0161**	**8.4000e-004**	**0.0170**	**4.3500e-003**	**7.7000e-004**	**5.1200e-003**	**0.0000**	**23.0223**	**23.0223**	**7.2000e-004**	**0.0000**	**23.0373**

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	0.0211	0.1222	1.1230	1.7300e-003		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	156.1889	156.1889	0.0387	0.0000	157.0024
Total	**0.0211**	**0.1222**	**1.1230**	**1.7300e-003**		**1.3100e-003**	**1.3100e-003**		**1.3100e-003**	**1.3100e-003**	**0.0000**	**156.1889**	**156.1889**	**0.0387**	**0.0000**	**157.0024**

3.2 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.8700e-003	0.0504	0.0706	1.2000e-004	3.3600e-003	7.4000e-004	4.1000e-003	9.6000e-004	6.8000e-004	1.6400e-003	0.0000	11.1325	11.1325	9.0000e-005	0.0000	11.1344
Worker	5.4600e-003	7.2100e-003	0.0687	1.6000e-004	0.0128	1.0000e-004	0.0129	3.3900e-003	9.0000e-005	3.4800e-003	0.0000	11.8897	11.8897	6.3000e-004	0.0000	11.9029
Total	**0.0113**	**0.0576**	**0.1394**	**2.8000e-004**	**0.0161**	**8.4000e-004**	**0.0170**	**4.3500e-003**	**7.7000e-004**	**5.1200e-003**	**0.0000**	**23.0223**	**23.0223**	**7.2000e-004**	**0.0000**	**23.0373**

3.2 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.9447	8.0405	5.5203	8.1600e-003		0.5424	0.5424		0.5094	0.5094	0.0000	729.2139	729.2139	0.1795	0.0000	732.9828
Total	**0.9447**	**8.0405**	**5.5203**	**8.1600e-003**		**0.5424**	**0.5424**		**0.5094**	**0.5094**	**0.0000**	**729.2139**	**729.2139**	**0.1795**	**0.0000**	**732.9828**

3.2 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0254	0.2127	0.3150	5.8000e-004	0.0159	3.0400e-003	0.0189	4.5300e-003	2.8000e-003	7.3300e-003	0.0000	51.6676	51.6676	3.9000e-004	0.0000	51.6757
Worker	0.0233	0.0309	0.2924	7.4000e-004	0.0602	4.5000e-004	0.0607	0.0160	4.1000e-004	0.0164	0.0000	53.9618	53.9618	2.7400e-003	0.0000	54.0194
Total	**0.0487**	**0.2437**	**0.6074**	**1.3200e-003**	**0.0761**	**3.4900e-003**	**0.0796**	**0.0205**	**3.2100e-003**	**0.0238**	**0.0000**	**105.6293**	**105.6293**	**3.1300e-003**	**0.0000**	**105.6951**

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	0.0994	0.5769	5.3017	8.1600e-003		6.1800e-003	6.1800e-003		6.1800e-003	6.1800e-003	0.0000	729.2130	729.2130	0.1795	0.0000	732.9819
Total	**0.0994**	**0.5769**	**5.3017**	**8.1600e-003**		**6.1800e-003**	**6.1800e-003**		**6.1800e-003**	**6.1800e-003**	**0.0000**	**729.2130**	**729.2130**	**0.1795**	**0.0000**	**732.9819**

3.2 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0254	0.2127	0.3150	5.8000e-004	0.0159	3.0400e-003	0.0189	4.5300e-003	2.8000e-003	7.3300e-003	0.0000	51.6676	51.6676	3.9000e-004	0.0000	51.6757
Worker	0.0233	0.0309	0.2924	7.4000e-004	0.0602	4.5000e-004	0.0607	0.0160	4.1000e-004	0.0164	0.0000	53.9618	53.9618	2.7400e-003	0.0000	54.0194
Total	**0.0487**	**0.2437**	**0.6074**	**1.3200e-003**	**0.0761**	**3.4900e-003**	**0.0796**	**0.0205**	**3.2100e-003**	**0.0238**	**0.0000**	**105.6293**	**105.6293**	**3.1300e-003**	**0.0000**	**105.6951**

3.3 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0449	0.4813	0.3186	4.8000e-004		0.0271	0.0271		0.0249	0.0249	0.0000	45.1797	45.1797	0.0136	0.0000	45.4659
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0449**	**0.4813**	**0.3186**	**4.8000e-004**		**0.0271**	**0.0271**		**0.0249**	**0.0249**	**0.0000**	**45.1797**	**45.1797**	**0.0136**	**0.0000**	**45.4659**

3.3 Paving - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	1.4600e-003	0.0139	3.0000e-005	2.5900e-003	2.0000e-005	2.6100e-003	6.9000e-004	2.0000e-005	7.1000e-004	0.0000	2.4101	2.4101	1.3000e-004	0.0000	2.4128
Total	**1.1100e-003**	**1.4600e-003**	**0.0139**	**3.0000e-005**	**2.5900e-003**	**2.0000e-005**	**2.6100e-003**	**6.9000e-004**	**2.0000e-005**	**7.1000e-004**	**0.0000**	**2.4101**	**2.4101**	**1.3000e-004**	**0.0000**	**2.4128**

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	5.9000e-003	0.0217	0.3639	4.8000e-004		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	45.1797	45.1797	0.0136	0.0000	45.4658
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.9000e-003**	**0.0217**	**0.3639**	**4.8000e-004**		**3.9000e-004**	**3.9000e-004**		**3.9000e-004**	**3.9000e-004**	**0.0000**	**45.1797**	**45.1797**	**0.0136**	**0.0000**	**45.4658**

3.3 Paving - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	1.4600e-003	0.0139	3.0000e-005	2.5900e-003	2.0000e-005	2.6100e-003	6.9000e-004	2.0000e-005	7.1000e-004	0.0000	2.4101	2.4101	1.3000e-004	0.0000	2.4128
Total	**1.1100e-003**	**1.4600e-003**	**0.0139**	**3.0000e-005**	**2.5900e-003**	**2.0000e-005**	**2.6100e-003**	**6.9000e-004**	**2.0000e-005**	**7.1000e-004**	**0.0000**	**2.4101**	**2.4101**	**1.3000e-004**	**0.0000**	**2.4128**

3.3 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1936	2.0601	1.4948	2.2600e-003		0.1156	0.1156		0.1063	0.1063	0.0000	210.0382	210.0382	0.0644	0.0000	211.3897
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1936**	**2.0601**	**1.4948**	**2.2600e-003**		**0.1156**	**0.1156**		**0.1063**	**0.1063**	**0.0000**	**210.0382**	**210.0382**	**0.0644**	**0.0000**	**211.3897**

3.3 Paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7300e-003	6.2700e-003	0.0593	1.5000e-004	0.0122	9.0000e-005	0.0123	3.2400e-003	8.0000e-005	3.3300e-003	0.0000	10.9382	10.9382	5.6000e-004	0.0000	10.9499
Total	**4.7300e-003**	**6.2700e-003**	**0.0593**	**1.5000e-004**	**0.0122**	**9.0000e-005**	**0.0123**	**3.2400e-003**	**8.0000e-005**	**3.3300e-003**	**0.0000**	**10.9382**	**10.9382**	**5.6000e-004**	**0.0000**	**10.9499**

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	0.0279	0.1026	1.7182	2.2600e-003		1.8600e-003	1.8600e-003		1.8600e-003	1.8600e-003	0.0000	210.0379	210.0379	0.0644	0.0000	211.3894
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0279**	**0.1026**	**1.7182**	**2.2600e-003**		**1.8600e-003**	**1.8600e-003**		**1.8600e-003**	**1.8600e-003**	**0.0000**	**210.0379**	**210.0379**	**0.0644**	**0.0000**	**211.3894**

3.3 Paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7300e-003	6.2700e-003	0.0593	1.5000e-004	0.0122	9.0000e-005	0.0123	3.2400e-003	8.0000e-005	3.3300e-003	0.0000	10.9382	10.9382	5.6000e-004	0.0000	10.9499
Total	**4.7300e-003**	**6.2700e-003**	**0.0593**	**1.5000e-004**	**0.0122**	**9.0000e-005**	**0.0123**	**3.2400e-003**	**8.0000e-005**	**3.3300e-003**	**0.0000**	**10.9382**	**10.9382**	**5.6000e-004**	**0.0000**	**10.9499**

3.4 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.2393					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0301	0.1977	0.1691	2.7000e-004		0.0157	0.0157		0.0157	0.0157	0.0000	23.1070	23.1070	2.4400e-003	0.0000	23.1582
Total	**2.2693**	**0.1977**	**0.1691**	**2.7000e-004**		**0.0157**	**0.0157**		**0.0157**	**0.0157**	**0.0000**	**23.1070**	**23.1070**	**2.4400e-003**	**0.0000**	**23.1582**

3.4 Architectural Coating - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2200e-003	5.5900e-003	0.0529	1.3000e-004	0.0109	8.0000e-005	0.0110	2.8900e-003	7.0000e-005	2.9700e-003	0.0000	9.7528	9.7528	5.0000e-004	0.0000	9.7632
Total	**4.2200e-003**	**5.5900e-003**	**0.0529**	**1.3000e-004**	**0.0109**	**8.0000e-005**	**0.0110**	**2.8900e-003**	**7.0000e-005**	**2.9700e-003**	**0.0000**	**9.7528**	**9.7528**	**5.0000e-004**	**0.0000**	**9.7632**

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	2.2393					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6900e-003	9.9100e-003	0.1658	2.7000e-004		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	23.1069	23.1069	2.4400e-003	0.0000	23.1582
Total	**2.2420**	**9.9100e-003**	**0.1658**	**2.7000e-004**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**	**0.0000**	**23.1069**	**23.1069**	**2.4400e-003**	**0.0000**	**23.1582**

3.4 Architectural Coating - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2200e-003	5.5900e-003	0.0529	1.3000e-004	0.0109	8.0000e-005	0.0110	2.8900e-003	7.0000e-005	2.9700e-003	0.0000	9.7528	9.7528	5.0000e-004	0.0000	9.7632
Total	**4.2200e-003**	**5.5900e-003**	**0.0529**	**1.3000e-004**	**0.0109**	**8.0000e-005**	**0.0110**	**2.8900e-003**	**7.0000e-005**	**2.9700e-003**	**0.0000**	**9.7528**	**9.7528**	**5.0000e-004**	**0.0000**	**9.7632**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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	0.0374	0.0142	1.2292	6.0000e-005		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Unmitigated	0.0374	0.0142	1.2292	6.0000e-005		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	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	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0374	0.0142	1.2292	6.0000e-005		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Total	**0.0374**	**0.0142**	**1.2292**	**6.0000e-005**		**6.7600e-003**	**6.7600e-003**		**6.7600e-003**	**6.7600e-003**	**0.0000**	**2.0013**	**2.0013**	**1.9500e-003**	**0.0000**	**2.0423**

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	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0374	0.0142	1.2292	6.0000e-005		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	0.0000	2.0013	2.0013	1.9500e-003	0.0000	2.0423
Total	**0.0374**	**0.0142**	**1.2292**	**6.0000e-005**		**6.7600e-003**	**6.7600e-003**		**6.7600e-003**	**6.7600e-003**	**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**

7.2 Water by Land Use

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**

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	0.01	0.92	0.01	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.85	0.90	0.04	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.84	0.95	-0.14	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	Tier 4 Final	1	1	Level 2	15.00
Cranes	Diesel	Tier 4 Final	3	3	Level 2	15.00
Forklifts	Diesel	Tier 4 Final	9	9	Level 2	15.00
Generator Sets	Diesel	Tier 4 Final	3	3	Level 2	15.00
Pavers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Paving Equipment	Diesel	Tier 4 Final	2	2	Level 2	15.00
Rollers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	9	9	Level 2	15.00
Welders	Diesel	Tier 4 Final	3	3	Level 2	15.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	3.00700E-002	1.97740E-001	1.69060E-001	2.70000E-004	1.56900E-002	1.56900E-002	0.00000E+000	2.31070E+001	2.31070E+001	2.44000E-003	0.00000E+000	2.31582E+001
Cranes	2.13280E-001	2.53120E+000	9.02850E-001	1.82000E-003	1.13230E-001	1.04170E-001	0.00000E+000	1.69538E+002	1.69538E+002	5.18000E-002	0.00000E+000	1.70626E+002
Forklifts	2.36610E-001	2.04638E+000	1.38545E+000	1.69000E-003	1.69250E-001	1.55710E-001	0.00000E+000	1.57352E+002	1.57352E+002	4.80800E-002	0.00000E+000	1.58362E+002
Generator Sets	2.14820E-001	1.67119E+000	1.39434E+000	2.43000E-003	1.13320E-001	1.13320E-001	0.00000E+000	2.08562E+002	2.08562E+002	1.72700E-002	0.00000E+000	2.08924E+002
Pavers	9.03500E-002	1.01230E+000	6.98350E-001	1.11000E-003	4.99100E-002	4.59200E-002	0.00000E+000	1.03380E+002	1.03380E+002	3.15900E-002	0.00000E+000	1.04043E+002
Paving Equipment	7.05800E-002	8.06250E-001	6.24300E-001	9.90000E-004	4.02200E-002	3.70100E-002	0.00000E+000	9.18241E+001	9.18241E+001	2.80600E-002	0.00000E+000	9.24133E+001
Rollers	7.76000E-002	7.22830E-001	4.90720E-001	6.40000E-004	5.25300E-002	4.83300E-002	0.00000E+000	6.00137E+001	6.00137E+001	1.83400E-002	0.00000E+000	6.03988E+001
Tractors/Loaders/ Backhoes	3.10880E-001	2.98412E+000	2.32192E+000	3.01000E-003	2.25410E-001	2.07380E-001	0.00000E+000	2.80498E+002	2.80498E+002	8.57100E-002	0.00000E+000	2.82298E+002
Welders	1.88790E-001	6.46280E-001	7.09450E-001	9.40000E-004	4.80700E-002	4.80700E-002	0.00000E+000	6.94534E+001	6.94534E+001	1.53500E-002	0.00000E+000	6.97758E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	2.69000E-003	9.91000E-003	1.65830E-001	2.70000E-004	1.80000E-004	1.80000E-004	0.00000E+000	2.31069E+001	2.31069E+001	2.44000E-003	0.00000E+000	2.31582E+001
Cranes	2.23900E-002	8.24800E-002	8.21080E-001	1.82000E-003	1.49000E-003	1.49000E-003	0.00000E+000	1.69538E+002	1.69538E+002	5.18000E-002	0.00000E+000	1.70626E+002
Forklifts	2.08500E-002	7.68000E-002	1.28586E+000	1.69000E-003	1.39000E-003	1.39000E-003	0.00000E+000	1.57352E+002	1.57352E+002	4.80800E-002	0.00000E+000	1.58362E+002
Generator Sets	2.42700E-002	8.94000E-002	1.49680E+000	2.43000E-003	1.62000E-003	1.62000E-003	0.00000E+000	2.08561E+002	2.08561E+002	1.72700E-002	0.00000E+000	2.08924E+002
Pavers	1.36700E-002	5.03400E-002	8.42790E-001	1.11000E-003	9.10000E-004	9.10000E-004	0.00000E+000	1.03380E+002	1.03380E+002	3.15900E-002	0.00000E+000	1.04043E+002
Paving Equipment	1.21800E-002	4.48700E-002	7.51290E-001	9.90000E-004	8.10000E-004	8.10000E-004	0.00000E+000	9.18240E+001	9.18240E+001	2.80600E-002	0.00000E+000	9.24132E+001
Rollers	7.91000E-003	2.91500E-002	4.88020E-001	6.40000E-004	5.30000E-004	5.30000E-004	0.00000E+000	6.00137E+001	6.00137E+001	1.83400E-002	0.00000E+000	6.03988E+001
Tractors/Loaders/Backhoes	3.67900E-002	1.35500E-001	2.26858E+000	3.01000E-003	2.45000E-003	2.45000E-003	0.00000E+000	2.80497E+002	2.80497E+002	8.57100E-002	0.00000E+000	2.82297E+002
Welders	1.61700E-002	3.14900E-001	5.52340E-001	9.40000E-004	5.40000E-004	5.40000E-004	0.00000E+000	6.94533E+001	6.94533E+001	1.53500E-002	0.00000E+000	6.97757E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	9.10542E-001	9.49884E-001	1.91056E-002	0.00000E+000	9.88528E-001	9.88528E-001	0.00000E+000	1.29831E-006	1.29831E-006	0.00000E+000	0.00000E+000	1.29544E-006
Cranes	8.95021E-001	9.67415E-001	9.05688E-002	0.00000E+000	9.86841E-001	9.85696E-001	0.00000E+000	1.23866E-006	1.23866E-006	0.00000E+000	0.00000E+000	1.17216E-006
Forklifts	9.11880E-001	9.62470E-001	7.18828E-002	0.00000E+000	9.91787E-001	9.91073E-001	0.00000E+000	1.20748E-006	1.20748E-006	0.00000E+000	0.00000E+000	1.19978E-006
Generator Sets	8.87022E-001	9.46505E-001	-7.34828E-002	0.00000E+000	9.85704E-001	9.85704E-001	0.00000E+000	1.19869E-006	1.19869E-006	0.00000E+000	0.00000E+000	1.19661E-006
Pavers	8.48700E-001	9.50272E-001	-2.06830E-001	0.00000E+000	9.81767E-001	9.80183E-001	0.00000E+000	1.16077E-006	1.16077E-006	0.00000E+000	0.00000E+000	1.15336E-006
Paving Equipment	8.27430E-001	9.44347E-001	-2.03412E-001	0.00000E+000	9.79861E-001	9.78114E-001	0.00000E+000	1.19794E-006	1.19794E-006	0.00000E+000	0.00000E+000	1.19031E-006
Rollers	8.98067E-001	9.59672E-001	5.50212E-003	0.00000E+000	9.89911E-001	9.89034E-001	0.00000E+000	1.33303E-006	1.33303E-006	0.00000E+000	0.00000E+000	1.15896E-006
Tractors/Loaders/Backhoes	8.81659E-001	9.54593E-001	2.29724E-002	0.00000E+000	9.89131E-001	9.88186E-001	0.00000E+000	1.17648E-006	1.17648E-006	0.00000E+000	0.00000E+000	1.16898E-006
Welders	9.14349E-001	5.12750E-001	2.21453E-001	0.00000E+000	9.88766E-001	9.88766E-001	0.00000E+000	1.15185E-006	1.15185E-006	0.00000E+000	0.00000E+000	1.28985E-006

Fugitive Dust Mitigation

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

		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	0.01	0.00	0.01	0.00	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.09	0.02	0.09	0.02	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.01	0.00	0.01	0.00	0.00	0.00

Operational Percent Reduction Summary

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

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.10	0.32		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			
No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				

No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"				
No	Commute	Workplace Parking Charge				
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program				
	Commute	Commute Subtotal	0.00			
No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

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

Energy Mitigation Measures

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

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

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

No	Water Efficient Landscape	0.00	0.00

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	32.00
tblConstructionPhase	NumDays	300.00	75.00
tblConstructionPhase	NumDays	20.00	75.00
tblConstructionPhase	PhaseEndDate	3/9/2018	1/24/2018
tblConstructionPhase	PhaseEndDate	5/9/2018	1/24/2018
tblConstructionPhase	PhaseStartDate	1/25/2018	12/12/2017
tblConstructionPhase	PhaseStartDate	1/25/2018	10/12/2017
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	19.25	0.00
tblFireplaces	NumberWood	12.25	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	12.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	41.00	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	2,280,390.90	0.00
tblWater	OutdoorWaterUseRate	1,437,637.74	0.00
tblWoodstoves	NumberCatalytic	1.75	0.00
tblWoodstoves	NumberNoncatalytic	1.75	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

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					
2017	0.5866	3.6173	2.5462	3.8200e-003	7.3100e-003	0.2369	0.2442	1.9600e-003	0.2220	0.2239	0.0000	342.0716	342.0716	0.0858	0.0000	343.8728
2018	0.3361	1.0138	0.7926	1.2300e-003	2.4700e-003	0.0637	0.0661	6.6000e-004	0.0598	0.0604	0.0000	108.5465	108.5465	0.0269	0.0000	109.1111
Total	**0.9227**	**4.6311**	**3.3387**	**5.0500e-003**	**9.7800e-003**	**0.3006**	**0.3104**	**2.6200e-003**	**0.2817**	**0.2843**	**0.0000**	**450.6181**	**450.6181**	**0.1127**	**0.0000**	**452.9838**

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					
2017	0.2215	0.2589	2.5267	3.8200e-003	7.3100e-003	3.0400e-003	0.0104	1.9600e-003	3.0300e-003	4.9800e-003	0.0000	342.0712	342.0712	0.0858	0.0000	343.8724
2018	0.2374	0.0822	0.8099	1.2300e-003	2.4700e-003	9.7000e-004	3.4400e-003	6.6000e-004	9.7000e-004	1.6300e-003	0.0000	108.5464	108.5464	0.0269	0.0000	109.1110
Total	**0.4588**	**0.3411**	**3.3367**	**5.0500e-003**	**9.7800e-003**	**4.0100e-003**	**0.0138**	**2.6200e-003**	**4.0000e-003**	**6.6100e-003**	**0.0000**	**450.6176**	**450.6176**	**0.1127**	**0.0000**	**452.9833**

	ROG	**NOx**	**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	**50.27**	**92.64**	**0.06**	**0.00**	**0.00**	**98.67**	**95.56**	**0.00**	**98.58**	**97.68**	**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	0.0132	5.0000e-003	0.4321	2.0000e-005		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**0.0132**	**5.0000e-003**	**0.4321**	**2.0000e-005**	**0.0000**	**2.3800e-003**	**2.3800e-003**	**0.0000**	**2.3800e-003**	**2.3800e-003**	**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	0.0132	5.0000e-003	0.4321	2.0000e-005		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**0.0132**	**5.0000e-003**	**0.4321**	**2.0000e-005**	**0.0000**	**2.3800e-003**	**2.3800e-003**	**0.0000**	**2.3800e-003**	**2.3800e-003**	**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	10/12/2017	1/24/2018	5	75	
2	Paving	Paving	10/12/2017	1/24/2018	5	75	
3	Architectural Coating	Architectural Coating	12/12/2017	1/24/2018	5	32	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 127,575; Residential Outdoor: 42,525; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	4	7.00	226	0.29
Building Construction	Forklifts	12	8.00	89	0.20
Building Construction	Generator Sets	4	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	12	7.00	97	0.37
Building Construction	Welders	4	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	36	13.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3537	3.0103	2.0667	3.0600e-003		0.2031	0.2031		0.1907	0.1907	0.0000	273.0062	273.0062	0.0672	0.0000	274.4172
Total	**0.3537**	**3.0103**	**2.0667**	**3.0600e-003**		**0.2031**	**0.2031**		**0.1907**	**0.1907**	**0.0000**	**273.0062**	**273.0062**	**0.0672**	**0.0000**	**274.4172**

3.2 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1900e-003	9.9600e-003	0.0147	3.0000e-005	7.4000e-004	1.4000e-004	8.8000e-004	2.1000e-004	1.3000e-004	3.4000e-004	0.0000	2.4179	2.4179	2.0000e-005	0.0000	2.4183
Worker	1.1500e-003	1.5300e-003	0.0144	4.0000e-005	2.9700e-003	2.0000e-005	2.9900e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.6618	2.6618	1.4000e-004	0.0000	2.6647
Total	**2.3400e-003**	**0.0115**	**0.0292**	**7.0000e-005**	**3.7100e-003**	**1.6000e-004**	**3.8700e-003**	**1.0000e-003**	**1.5000e-004**	**1.1500e-003**	**0.0000**	**5.0798**	**5.0798**	**1.6000e-004**	**0.0000**	**5.0830**

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	0.0372	0.2160	1.9849	3.0600e-003		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003	0.0000	273.0059	273.0059	0.0672	0.0000	274.4169
Total	**0.0372**	**0.2160**	**1.9849**	**3.0600e-003**		**2.3100e-003**	**2.3100e-003**		**2.3100e-003**	**2.3100e-003**	**0.0000**	**273.0059**	**273.0059**	**0.0672**	**0.0000**	**274.4169**

3.2 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1900e-003	9.9600e-003	0.0147	3.0000e-005	7.4000e-004	1.4000e-004	8.8000e-004	2.1000e-004	1.3000e-004	3.4000e-004	0.0000	2.4179	2.4179	2.0000e-005	0.0000	2.4183
Worker	1.1500e-003	1.5300e-003	0.0144	4.0000e-005	2.9700e-003	2.0000e-005	2.9900e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.6618	2.6618	1.4000e-004	0.0000	2.6647
Total	**2.3400e-003**	**0.0115**	**0.0292**	**7.0000e-005**	**3.7100e-003**	**1.6000e-004**	**3.8700e-003**	**1.0000e-003**	**1.5000e-004**	**1.1500e-003**	**0.0000**	**5.0798**	**5.0798**	**1.6000e-004**	**0.0000**	**5.0830**

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0961	0.8374	0.6312	9.6000e-004		0.0538	0.0538		0.0506	0.0506	0.0000	85.2371	85.2371	0.0209	0.0000	85.6751
Total	**0.0961**	**0.8374**	**0.6312**	**9.6000e-004**		**0.0538**	**0.0538**		**0.0506**	**0.0506**	**0.0000**	**85.2371**	**85.2371**	**0.0209**	**0.0000**	**85.6751**

3.2 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5000e-004	2.8400e-003	4.4500e-003	1.0000e-005	2.3000e-004	4.0000e-005	2.8000e-004	7.0000e-005	4.0000e-005	1.1000e-004	0.0000	0.7504	0.7504	1.0000e-005	0.0000	0.7506
Worker	3.3000e-004	4.4000e-004	4.1200e-003	1.0000e-005	9.4000e-004	1.0000e-005	9.5000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.8090	0.8090	4.0000e-005	0.0000	0.8098
Total	**6.8000e-004**	**3.2800e-003**	**8.5700e-003**	**2.0000e-005**	**1.1700e-003**	**5.0000e-005**	**1.2300e-003**	**3.2000e-004**	**5.0000e-005**	**3.7000e-004**	**0.0000**	**1.5595**	**1.5595**	**5.0000e-005**	**0.0000**	**1.5604**

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	0.0118	0.0682	0.6268	9.6000e-004		7.3000e-004	7.3000e-004		7.3000e-004	7.3000e-004	0.0000	85.2370	85.2370	0.0209	0.0000	85.6750
Total	**0.0118**	**0.0682**	**0.6268**	**9.6000e-004**		**7.3000e-004**	**7.3000e-004**		**7.3000e-004**	**7.3000e-004**	**0.0000**	**85.2370**	**85.2370**	**0.0209**	**0.0000**	**85.6750**

3.2 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5000e-004	2.8400e-003	4.4500e-003	1.0000e-005	2.3000e-004	4.0000e-005	2.8000e-004	7.0000e-005	4.0000e-005	1.1000e-004	0.0000	0.7504	0.7504	1.0000e-005	0.0000	0.7506
Worker	3.3000e-004	4.4000e-004	4.1200e-003	1.0000e-005	9.4000e-004	1.0000e-005	9.5000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.8090	0.8090	4.0000e-005	0.0000	0.8098
Total	**6.8000e-004**	**3.2800e-003**	**8.5700e-003**	**2.0000e-005**	**1.1700e-003**	**5.0000e-005**	**1.2300e-003**	**3.2000e-004**	**5.0000e-005**	**3.7000e-004**	**0.0000**	**1.5595**	**1.5595**	**5.0000e-005**	**0.0000**	**1.5604**

3.3 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0544	0.5785	0.4197	6.4000e-004		0.0324	0.0324		0.0299	0.0299	0.0000	58.9762	58.9762	0.0181	0.0000	59.3557
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0544**	**0.5785**	**0.4197**	**6.4000e-004**		**0.0324**	**0.0324**		**0.0299**	**0.0299**	**0.0000**	**58.9762**	**58.9762**	**0.0181**	**0.0000**	**59.3557**

3.3 Paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3300e-003	1.7600e-003	0.0166	4.0000e-005	3.4300e-003	3.0000e-005	3.4500e-003	9.1000e-004	2.0000e-005	9.3000e-004	0.0000	3.0713	3.0713	1.6000e-004	0.0000	3.0746
Total	**1.3300e-003**	**1.7600e-003**	**0.0166**	**4.0000e-005**	**3.4300e-003**	**3.0000e-005**	**3.4500e-003**	**9.1000e-004**	**2.0000e-005**	**9.3000e-004**	**0.0000**	**3.0713**	**3.0713**	**1.6000e-004**	**0.0000**	**3.0746**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.8200e-003	0.0288	0.4824	6.4000e-004		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	58.9762	58.9762	0.0181	0.0000	59.3556
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.8200e-003**	**0.0288**	**0.4824**	**6.4000e-004**		**5.2000e-004**	**5.2000e-004**		**5.2000e-004**	**5.2000e-004**	**0.0000**	**58.9762**	**58.9762**	**0.0181**	**0.0000**	**59.3556**

3.3 Paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3300e-003	1.7600e-003	0.0166	4.0000e-005	3.4300e-003	3.0000e-005	3.4500e-003	9.1000e-004	2.0000e-005	9.3000e-004	0.0000	3.0713	3.0713	1.6000e-004	0.0000	3.0746
Total	**1.3300e-003**	**1.7600e-003**	**0.0166**	**4.0000e-005**	**3.4300e-003**	**3.0000e-005**	**3.4500e-003**	**9.1000e-004**	**2.0000e-005**	**9.3000e-004**	**0.0000**	**3.0713**	**3.0713**	**1.6000e-004**	**0.0000**	**3.0746**

3.3 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0145	0.1545	0.1305	2.0000e-004		8.4500e-003	8.4500e-003		7.7700e-003	7.7700e-003	0.0000	18.3319	18.3319	5.7100e-003	0.0000	18.4517
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0145**	**0.1545**	**0.1305**	**2.0000e-004**		**8.4500e-003**	**8.4500e-003**		**7.7700e-003**	**7.7700e-003**	**0.0000**	**18.3319**	**18.3319**	**5.7100e-003**	**0.0000**	**18.4517**

3.3 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	5.1000e-004	4.7500e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.9335	0.9335	5.0000e-005	0.0000	0.9344
Total	**3.8000e-004**	**5.1000e-004**	**4.7500e-003**	**1.0000e-005**	**1.0800e-003**	**1.0000e-005**	**1.0900e-003**	**2.9000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9335**	**0.9335**	**5.0000e-005**	**0.0000**	**0.9344**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.4700e-003	9.1000e-003	0.1524	2.0000e-004		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	18.3319	18.3319	5.7100e-003	0.0000	18.4517
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.4700e-003**	**9.1000e-003**	**0.1524**	**2.0000e-004**		**1.6000e-004**	**1.6000e-004**		**1.6000e-004**	**1.6000e-004**	**0.0000**	**18.3319**	**18.3319**	**5.7100e-003**	**0.0000**	**18.4517**

3.3 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	5.1000e-004	4.7500e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.9335	0.9335	5.0000e-005	0.0000	0.9344
Total	**3.8000e-004**	**5.1000e-004**	**4.7500e-003**	**1.0000e-005**	**1.0800e-003**	**1.0000e-005**	**1.0900e-003**	**2.9000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9335**	**0.9335**	**5.0000e-005**	**0.0000**	**0.9344**

3.4 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1725					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3300e-003	0.0153	0.0131	2.0000e-005		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	1.7873	1.7873	1.9000e-004	0.0000	1.7912
Total	**0.1748**	**0.0153**	**0.0131**	**2.0000e-005**		**1.2100e-003**	**1.2100e-003**		**1.2100e-003**	**1.2100e-003**	**0.0000**	**1.7873**	**1.7873**	**1.9000e-004**	**0.0000**	**1.7912**

3.4 Architectural Coating - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	9.0000e-005	8.2000e-004	0.0000	1.7000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	5.0000e-005	0.0000	0.1509	0.1509	1.0000e-005	0.0000	0.1510
Total	**7.0000e-005**	**9.0000e-005**	**8.2000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1509**	**0.1509**	**1.0000e-005**	**0.0000**	**0.1510**

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	0.1725					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1000e-004	7.7000e-004	0.0128	2.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	1.7873	1.7873	1.9000e-004	0.0000	1.7912
Total	**0.1727**	**7.7000e-004**	**0.0128**	**2.0000e-005**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.7873**	**1.7873**	**1.9000e-004**	**0.0000**	**1.7912**

3.4 Architectural Coating - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	9.0000e-005	8.2000e-004	0.0000	1.7000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	5.0000e-005	0.0000	0.1509	0.1509	1.0000e-005	0.0000	0.1510
Total	**7.0000e-005**	**9.0000e-005**	**8.2000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1509**	**0.1509**	**1.0000e-005**	**0.0000**	**0.1510**

3.4 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2217					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6900e-003	0.0181	0.0167	3.0000e-005		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	2.2979	2.2979	2.2000e-004	0.0000	2.3025
Total	**0.2244**	**0.0181**	**0.0167**	**3.0000e-005**		**1.3500e-003**	**1.3500e-003**		**1.3500e-003**	**1.3500e-003**	**0.0000**	**2.2979**	**2.2979**	**2.2000e-004**	**0.0000**	**2.3025**

3.4 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	1.0000e-004	9.5000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1867	0.1867	1.0000e-005	0.0000	0.1869
Total	**8.0000e-005**	**1.0000e-004**	**9.5000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**2.2000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.1867**	**0.1867**	**1.0000e-005**	**0.0000**	**0.1869**

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	0.2217					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-004	9.9000e-004	0.0165	3.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	2.2979	2.2979	2.2000e-004	0.0000	2.3025
Total	**0.2220**	**9.9000e-004**	**0.0165**	**3.0000e-005**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.2979**	**2.2979**	**2.2000e-004**	**0.0000**	**2.3025**

3.4 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	1.0000e-004	9.5000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1867	0.1867	1.0000e-005	0.0000	0.1869
Total	**8.0000e-005**	**1.0000e-004**	**9.5000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**2.2000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.1867**	**0.1867**	**1.0000e-005**	**0.0000**	**0.1869**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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	0.0132	5.0000e-003	0.4321	2.0000e-005		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003	0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179
Unmitigated	0.0132	5.0000e-003	0.4321	2.0000e-005		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003	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	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0132	5.0000e-003	0.4321	2.0000e-005		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003	0.0000	0.7035	0.7035	6.9000e-004	0.0000	0.7179
Total	**0.0132**	**5.0000e-003**	**0.4321**	**2.0000e-005**		**2.3800e-003**	**2.3800e-003**		**2.3800e-003**	**2.3800e-003**	**0.0000**	**0.7035**	**0.7035**	**6.9000e-004**	**0.0000**	**0.7179**

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					
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0132	5.0000e-003	0.4321	2.0000e-005		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003	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	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0132**	**5.0000e-003**	**0.4321**	**2.0000e-005**		**2.3800e-003**	**2.3800e-003**		**2.3800e-003**	**2.3800e-003**	**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**

7.2 Water by Land Use

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**

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	0.01	0.94	0.01	0.00	0.99	0.99	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.89	0.92	0.03	0.00	0.99	0.99	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.83	0.95	-0.15	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	Tier 4 Final	1	1	Level 2	15.00
Cranes	Diesel	Tier 4 Final	4	4	Level 2	15.00
Forklifts	Diesel	Tier 4 Final	12	12	Level 2	15.00
Generator Sets	Diesel	Tier 4 Final	4	4	Level 2	15.00
Pavers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Paving Equipment	Diesel	Tier 4 Final	2	2	Level 2	15.00
Rollers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	12	12	Level 2	15.00
Welders	Diesel	Tier 4 Final	4	4	Level 2	15.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	5.01000E-003	3.33500E-002	2.97600E-002	5.00000E-005	2.57000E-003	2.57000E-003	0.00000E+000	4.08521E+000	4.08521E+000	4.10000E-004	0.00000E+000	4.09376E+000
Cranes	8.22300E-002	9.77580E-001	3.52660E-001	7.40000E-004	4.33100E-002	3.98400E-002	0.00000E+000	6.84675E+001	6.84675E+001	2.10600E-002	0.00000E+000	6.89097E+001
Forklifts	9.13800E-002	7.94680E-001	5.58010E-001	6.90000E-004	6.51000E-002	5.99000E-002	0.00000E+000	6.35467E+001	6.35467E+001	1.95400E-002	0.00000E+000	6.39571E+001
Generator Sets	8.31800E-002	6.57000E-001	5.65080E-001	9.90000E-004	4.36800E-002	4.36800E-002	0.00000E+000	8.47811E+001	8.47811E+001	6.68000E-003	0.00000E+000	8.49215E+001
Pavers	2.61700E-002	2.92210E-001	2.12300E-001	3.40000E-004	1.43600E-002	1.32100E-002	0.00000E+000	3.13193E+001	3.13193E+001	9.63000E-003	0.00000E+000	3.15216E+001
Paving Equipment	2.03300E-002	2.30440E-001	1.89550E-001	3.00000E-004	1.14600E-002	1.05500E-002	0.00000E+000	2.78127E+001	2.78127E+001	8.55000E-003	0.00000E+000	2.79924E+001
Rollers	2.23600E-002	2.10260E-001	1.48320E-001	2.00000E-004	1.50700E-002	1.38600E-002	0.00000E+000	1.81760E+001	1.81760E+001	5.59000E-003	0.00000E+000	1.82934E+001
Tractors/Loaders/ Backhoes	1.19950E-001	1.15939E+000	9.37180E-001	1.22000E-003	8.61100E-002	7.92200E-002	0.00000E+000	1.13215E+002	1.13215E+002	3.48200E-002	0.00000E+000	1.13946E+002
Welders	7.30100E-002	2.58990E-001	2.84970E-001	3.80000E-004	1.86500E-002	1.86500E-002	0.00000E+000	2.82331E+001	2.82331E+001	5.94000E-003	0.00000E+000	2.83579E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	4.80000E-004	1.75000E-003	2.93200E-002	5.00000E-005	3.00000E-005	3.00000E-005	0.00000E+000	4.08521E+000	4.08521E+000	4.10000E-004	0.00000E+000	4.09375E+000
Cranes	9.10000E-003	3.35300E-002	3.33770E-001	7.40000E-004	6.10000E-004	6.10000E-004	0.00000E+000	6.84674E+001	6.84674E+001	2.10600E-002	0.00000E+000	6.89096E+001
Forklifts	8.48000E-003	3.12200E-002	5.22710E-001	6.90000E-004	5.70000E-004	5.70000E-004	0.00000E+000	6.35466E+001	6.35466E+001	1.95400E-002	0.00000E+000	6.39570E+001
Generator Sets	9.87000E-003	3.63400E-002	6.08450E-001	9.90000E-004	6.60000E-004	6.60000E-004	0.00000E+000	8.47810E+001	8.47810E+001	6.68000E-003	0.00000E+000	8.49214E+001
Pavers	4.17000E-003	1.53500E-002	2.56950E-001	3.40000E-004	2.80000E-004	2.80000E-004	0.00000E+000	3.13193E+001	3.13193E+001	9.63000E-003	0.00000E+000	3.15216E+001
Paving Equipment	3.71000E-003	1.36800E-002	2.29050E-001	3.00000E-004	2.50000E-004	2.50000E-004	0.00000E+000	2.78127E+001	2.78127E+001	8.55000E-003	0.00000E+000	2.79923E+001
Rollers	2.41000E-003	8.89000E-003	1.48790E-001	2.00000E-004	1.60000E-004	1.60000E-004	0.00000E+000	1.81760E+001	1.81760E+001	5.59000E-003	0.00000E+000	1.82934E+001
Tractors/Loaders/Backhoes	1.49500E-002	5.50800E-002	9.22190E-001	1.22000E-003	1.00000E-003	1.00000E-003	0.00000E+000	1.13215E+002	1.13215E+002	3.48200E-002	0.00000E+000	1.13946E+002
Welders	6.57000E-003	1.28010E-001	2.24530E-001	3.80000E-004	2.20000E-004	2.20000E-004	0.00000E+000	2.82331E+001	2.82331E+001	5.94000E-003	0.00000E+000	2.83579E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	9.04192E-001	9.47526E-001	1.47849E-002	0.00000E+000	9.88327E-001	9.88327E-001	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.44274E-006
Cranes	8.89335E-001	9.65701E-001	5.35643E-002	0.00000E+000	9.85915E-001	9.84689E-001	0.00000E+000	1.16844E-006	1.16844E-006	0.00000E+000	0.00000E+000	1.30606E-006
Forklifts	9.07201E-001	9.60714E-001	6.32605E-002	0.00000E+000	9.91244E-001	9.90484E-001	0.00000E+000	1.25892E-006	1.25892E-006	0.00000E+000	0.00000E+000	1.25084E-006
Generator Sets	8.81342E-001	9.44688E-001	-7.67502E-002	0.00000E+000	9.84890E-001	9.84890E-001	0.00000E+000	1.17951E-006	1.17951E-006	0.00000E+000	0.00000E+000	1.17756E-006
Pavers	8.40657E-001	9.47469E-001	-2.10316E-001	0.00000E+000	9.80501E-001	9.78804E-001	0.00000E+000	1.27717E-006	1.27717E-006	0.00000E+000	0.00000E+000	9.51728E-007
Paving Equipment	8.17511E-001	9.40635E-001	-2.08388E-001	0.00000E+000	9.78185E-001	9.76303E-001	0.00000E+000	1.43819E-006	1.43819E-006	0.00000E+000	0.00000E+000	1.42896E-006
Rollers	8.92218E-001	9.57719E-001	-3.16882E-003	0.00000E+000	9.89383E-001	9.88456E-001	0.00000E+000	1.10035E-006	1.10035E-006	0.00000E+000	0.00000E+000	1.09329E-006
Tractors/Loaders/Backhoes	8.75365E-001	9.52492E-001	1.59948E-002	0.00000E+000	9.88387E-001	9.87377E-001	0.00000E+000	1.14826E-006	1.14826E-006	0.00000E+000	0.00000E+000	1.22865E-006
Welders	9.10012E-001	5.05734E-001	2.12093E-001	0.00000E+000	9.88204E-001	9.88204E-001	0.00000E+000	1.06258E-006	1.06258E-006	0.00000E+000	0.00000E+000	1.05791E-006

Fugitive Dust Mitigation

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

		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	122.00
tblConstructionPhase	NumDays	300.00	185.00
tblConstructionPhase	NumDays	20.00	185.00
tblConstructionPhase	PhaseEndDate	3/29/2019	10/10/2018
tblConstructionPhase	PhaseEndDate	6/26/2019	10/10/2018
tblConstructionPhase	PhaseStartDate	10/11/2018	4/24/2018
tblConstructionPhase	PhaseStartDate	10/11/2018	1/25/2018
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	41.80	0.00
tblFireplaces	NumberWood	26.60	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	88.97	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	4,951,705.95	0.00
tblWater	OutdoorWaterUseRate	3,121,727.66	0.00
tblWoodstoves	NumberCatalytic	3.80	0.00
tblWoodstoves	NumberNoncatalytic	3.80	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

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	1.5360	6.0873	4.9364	7.7900e-003	0.0384	0.3736	0.4120	0.0103	0.3500	0.3603	0.0000	686.4075	686.4075	0.1689	0.0000	689.9537
Total	**1.5360**	**6.0873**	**4.9364**	**7.7900e-003**	**0.0384**	**0.3736**	**0.4120**	**0.0103**	**0.3500**	**0.3603**	**0.0000**	**686.4075**	**686.4075**	**0.1689**	**0.0000**	**689.9537**

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	0.9627	0.5248	5.1377	7.7900e-003	0.0384	6.6700e-003	0.0451	0.0103	6.5900e-003	0.0169	0.0000	686.4067	686.4067	0.1689	0.0000	689.9529
Total	**0.9627**	**0.5248**	**5.1377**	**7.7900e-003**	**0.0384**	**6.6700e-003**	**0.0451**	**0.0103**	**6.5900e-003**	**0.0169**	**0.0000**	**686.4067**	**686.4067**	**0.1689**	**0.0000**	**689.9529**

	ROG	**NOx**	**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	**37.33**	**91.38**	**-4.08**	**0.00**	**0.00**	**98.21**	**89.06**	**0.00**	**98.12**	**95.31**	**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	7.9400e-003	3.0200e-003	0.2607	1.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**7.9400e-003**	**3.0200e-003**	**0.2607**	**1.0000e-005**	**0.0000**	**1.4300e-003**	**1.4300e-003**	**0.0000**	**1.4300e-003**	**1.4300e-003**	**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	7.9400e-003	3.0200e-003	0.2607	1.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**7.9400e-003**	**3.0200e-003**	**0.2607**	**1.0000e-005**	**0.0000**	**1.4300e-003**	**1.4300e-003**	**0.0000**	**1.4300e-003**	**1.4300e-003**	**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	1/25/2018	10/10/2018	5	185	
2	Paving	Paving	1/25/2018	10/10/2018	5	185	
3	Architectural Coating	Architectural Coating	4/24/2018	10/10/2018	5	122	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 277,020; Residential Outdoor: 92,340; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	2	7.00	226	0.29
Building Construction	Forklifts	6	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	6	7.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	18	27.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4937	4.3033	3.2435	4.9600e-003		0.2764	0.2764		0.2599	0.2599	0.0000	438.0239	438.0239	0.1072	0.0000	440.2750
Total	**0.4937**	**4.3033**	**3.2435**	**4.9600e-003**		**0.2764**	**0.2764**		**0.2599**	**0.2599**	**0.0000**	**438.0239**	**438.0239**	**0.1072**	**0.0000**	**440.2750**

3.2 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.2400e-003	0.0584	0.0915	1.8000e-004	4.8100e-003	8.6000e-004	5.6700e-003	1.3800e-003	7.9000e-004	2.1700e-003	0.0000	15.4258	15.4258	1.2000e-004	0.0000	15.4282
Worker	7.0500e-003	9.3800e-003	0.0880	2.5000e-004	0.0200	1.5000e-004	0.0202	5.3200e-003	1.4000e-004	5.4600e-003	0.0000	17.2692	17.2692	8.5000e-004	0.0000	17.2870
Total	**0.0143**	**0.0677**	**0.1794**	**4.3000e-004**	**0.0248**	**1.0100e-003**	**0.0258**	**6.7000e-003**	**9.3000e-004**	**7.6300e-003**	**0.0000**	**32.6949**	**32.6949**	**9.7000e-004**	**0.0000**	**32.7152**

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	0.0604	0.3505	3.2210	4.9600e-003		3.7600e-003	3.7600e-003		3.7600e-003	3.7600e-003	0.0000	438.0234	438.0234	0.1072	0.0000	440.2744
Total	**0.0604**	**0.3505**	**3.2210**	**4.9600e-003**		**3.7600e-003**	**3.7600e-003**		**3.7600e-003**	**3.7600e-003**	**0.0000**	**438.0234**	**438.0234**	**0.1072**	**0.0000**	**440.2744**

3.2 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.2400e-003	0.0584	0.0915	1.8000e-004	4.8100e-003	8.6000e-004	5.6700e-003	1.3800e-003	7.9000e-004	2.1700e-003	0.0000	15.4258	15.4258	1.2000e-004	0.0000	15.4282
Worker	7.0500e-003	9.3800e-003	0.0880	2.5000e-004	0.0200	1.5000e-004	0.0202	5.3200e-003	1.4000e-004	5.4600e-003	0.0000	17.2692	17.2692	8.5000e-004	0.0000	17.2870
Total	**0.0143**	**0.0677**	**0.1794**	**4.3000e-004**	**0.0248**	**1.0100e-003**	**0.0258**	**6.7000e-003**	**9.3000e-004**	**7.6300e-003**	**0.0000**	**32.6949**	**32.6949**	**9.7000e-004**	**0.0000**	**32.7152**

3.3 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1491	1.5876	1.3407	2.0600e-003		0.0868	0.0868		0.0799	0.0799	0.0000	188.4109	188.4109	0.0587	0.0000	189.6426
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1491**	**1.5876**	**1.3407**	**2.0600e-003**		**0.0868**	**0.0868**		**0.0799**	**0.0799**	**0.0000**	**188.4109**	**188.4109**	**0.0587**	**0.0000**	**189.6426**

3.3 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9200e-003	5.2100e-003	0.0489	1.4000e-004	0.0111	8.0000e-005	0.0112	2.9600e-003	8.0000e-005	3.0300e-003	0.0000	9.5940	9.5940	4.7000e-004	0.0000	9.6039
Total	**3.9200e-003**	**5.2100e-003**	**0.0489**	**1.4000e-004**	**0.0111**	**8.0000e-005**	**0.0112**	**2.9600e-003**	**8.0000e-005**	**3.0300e-003**	**0.0000**	**9.5940**	**9.5940**	**4.7000e-004**	**0.0000**	**9.6039**

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	0.0254	0.0935	1.5658	2.0600e-003		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	188.4106	188.4106	0.0587	0.0000	189.6424
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0254**	**0.0935**	**1.5658**	**2.0600e-003**		**1.6900e-003**	**1.6900e-003**		**1.6900e-003**	**1.6900e-003**	**0.0000**	**188.4106**	**188.4106**	**0.0587**	**0.0000**	**189.6424**

3.3 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9200e-003	5.2100e-003	0.0489	1.4000e-004	0.0111	8.0000e-005	0.0112	2.9600e-003	8.0000e-005	3.0300e-003	0.0000	9.5940	9.5940	4.7000e-004	0.0000	9.6039
Total	**3.9200e-003**	**5.2100e-003**	**0.0489**	**1.4000e-004**	**0.0111**	**8.0000e-005**	**0.0112**	**2.9600e-003**	**8.0000e-005**	**3.0300e-003**	**0.0000**	**9.5940**	**9.5940**	**4.7000e-004**	**0.0000**	**9.6039**

3.4 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8560					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0182	0.1224	0.1131	1.8000e-004		9.1800e-003	9.1800e-003		9.1800e-003	9.1800e-003	0.0000	15.5749	15.5749	1.4800e-003	0.0000	15.6060
Total	**0.8742**	**0.1224**	**0.1131**	**1.8000e-004**		**9.1800e-003**	**9.1800e-003**		**9.1800e-003**	**9.1800e-003**	**0.0000**	**15.5749**	**15.5749**	**1.4800e-003**	**0.0000**	**15.6060**

3.4 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.6000e-004	1.1500e-003	0.0107	3.0000e-005	2.4500e-003	2.0000e-005	2.4600e-003	6.5000e-004	2.0000e-005	6.7000e-004	0.0000	2.1090	2.1090	1.0000e-004	0.0000	2.1111
Total	**8.6000e-004**	**1.1500e-003**	**0.0107**	**3.0000e-005**	**2.4500e-003**	**2.0000e-005**	**2.4600e-003**	**6.5000e-004**	**2.0000e-005**	**6.7000e-004**	**0.0000**	**2.1090**	**2.1090**	**1.0000e-004**	**0.0000**	**2.1111**

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	0.8560					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	6.6800e-003	0.1118	1.8000e-004		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	15.5749	15.5749	1.4800e-003	0.0000	15.6059
Total	**0.8578**	**6.6800e-003**	**0.1118**	**1.8000e-004**		**1.2000e-004**	**1.2000e-004**		**1.2000e-004**	**1.2000e-004**	**0.0000**	**15.5749**	**15.5749**	**1.4800e-003**	**0.0000**	**15.6059**

3.4 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.6000e-004	1.1500e-003	0.0107	3.0000e-005	2.4500e-003	2.0000e-005	2.4600e-003	6.5000e-004	2.0000e-005	6.7000e-004	0.0000	2.1090	2.1090	1.0000e-004	0.0000	2.1111
Total	**8.6000e-004**	**1.1500e-003**	**0.0107**	**3.0000e-005**	**2.4500e-003**	**2.0000e-005**	**2.4600e-003**	**6.5000e-004**	**2.0000e-005**	**6.7000e-004**	**0.0000**	**2.1090**	**2.1090**	**1.0000e-004**	**0.0000**	**2.1111**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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	7.9400e-003	3.0200e-003	0.2607	1.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003	0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Unmitigated	7.9400e-003	3.0200e-003	0.2607	1.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003	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	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.9400e-003	3.0200e-003	0.2607	1.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003	0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Total	**7.9400e-003**	**3.0200e-003**	**0.2607**	**1.0000e-005**		**1.4300e-003**	**1.4300e-003**		**1.4300e-003**	**1.4300e-003**	**0.0000**	**0.4245**	**0.4245**	**4.1000e-004**	**0.0000**	**0.4332**

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	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.9400e-003	3.0200e-003	0.2607	1.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003	0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4332
Total	**7.9400e-003**	**3.0200e-003**	**0.2607**	**1.0000e-005**		**1.4300e-003**	**1.4300e-003**		**1.4300e-003**	**1.4300e-003**	**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**

7.2 Water by Land Use

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**

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	0.02	0.94	0.01	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.85	0.90	0.01	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.81	0.94	-0.16	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	Tier 4 Final	1	1	Level 2	15.00
Cranes	Diesel	Tier 4 Final	2	2	Level 2	15.00
Forklifts	Diesel	Tier 4 Final	6	6	Level 2	15.00
Generator Sets	Diesel	Tier 4 Final	2	2	Level 2	15.00
Pavers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Paving Equipment	Diesel	Tier 4 Final	2	2	Level 2	15.00
Rollers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	6	6	Level 2	15.00
Welders	Diesel	Tier 4 Final	2	2	Level 2	15.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	1.82200E-002	1.22350E-001	1.13110E-001	1.80000E-004	9.18000E-003	9.18000E-003	0.00000E+000	1.55749E+001	1.55749E+001	1.48000E-003	0.00000E+000	1.56060E+001
Cranes	9.03900E-002	1.08022E+000	3.99390E-001	9.10000E-004	4.67500E-002	4.30100E-002	0.00000E+000	8.34156E+001	8.34156E+001	2.59700E-002	0.00000E+000	8.39610E+001
Forklifts	9.88700E-002	8.73850E-001	6.72230E-001	8.50000E-004	6.97400E-002	6.41600E-002	0.00000E+000	7.74301E+001	7.74301E+001	2.41100E-002	0.00000E+000	7.79363E+001
Generator Sets	9.35000E-002	7.60970E-001	6.93230E-001	1.22000E-003	4.84700E-002	4.84700E-002	0.00000E+000	1.04563E+002	1.04563E+002	7.54000E-003	0.00000E+000	1.04722E+002
Pavers	5.80200E-002	6.41890E-001	5.20600E-001	8.40000E-004	3.13600E-002	2.88500E-002	0.00000E+000	7.63514E+001	7.63514E+001	2.37700E-002	0.00000E+000	7.68506E+001
Paving Equipment	4.33200E-002	4.84380E-001	4.62080E-001	7.40000E-004	2.37200E-002	2.18200E-002	0.00000E+000	6.77682E+001	6.77682E+001	2.11000E-002	0.00000E+000	6.82113E+001
Rollers	4.77100E-002	4.61280E-001	3.58060E-001	4.80000E-004	3.17400E-002	2.92000E-002	0.00000E+000	4.42912E+001	4.42912E+001	1.37900E-002	0.00000E+000	4.45808E+001
Tractors/Loaders/ Backhoes	1.29230E-001	1.27706E+000	1.13477E+000	1.51000E-003	9.04700E-002	8.32300E-002	0.00000E+000	1.37794E+002	1.37794E+002	4.29000E-002	0.00000E+000	1.38695E+002
Welders	8.17200E-002	3.11160E-001	3.43920E-001	4.70000E-004	2.10100E-002	2.10100E-002	0.00000E+000	3.48208E+001	3.48208E+001	6.68000E-003	0.00000E+000	3.49611E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	1.81000E-003	6.68000E-003	1.11780E-001	1.80000E-004	1.20000E-004	1.20000E-004	0.00000E+000	1.55749E+001	1.55749E+001	1.48000E-003	0.00000E+000	1.56059E+001
Cranes	1.12300E-002	4.13500E-002	4.11650E-001	9.10000E-004	7.50000E-004	7.50000E-004	0.00000E+000	8.34155E+001	8.34155E+001	2.59700E-002	0.00000E+000	8.39609E+001
Forklifts	1.04500E-002	3.85100E-002	6.44670E-001	8.50000E-004	7.00000E-004	7.00000E-004	0.00000E+000	7.74300E+001	7.74300E+001	2.41100E-002	0.00000E+000	7.79362E+001
Generator Sets	1.21700E-002	4.48200E-002	7.50430E-001	1.22000E-003	8.10000E-004	8.10000E-004	0.00000E+000	1.04563E+002	1.04563E+002	7.54000E-003	0.00000E+000	1.04722E+002
Pavers	1.02800E-002	3.78600E-002	6.33810E-001	8.40000E-004	6.90000E-004	6.90000E-004	0.00000E+000	7.63514E+001	7.63514E+001	2.37700E-002	0.00000E+000	7.68505E+001
Paving Equipment	9.16000E-003	3.37500E-002	5.64990E-001	7.40000E-004	6.10000E-004	6.10000E-004	0.00000E+000	6.77682E+001	6.77682E+001	2.11000E-002	0.00000E+000	6.82112E+001
Rollers	5.95000E-003	2.19200E-002	3.67000E-001	4.80000E-004	4.00000E-004	4.00000E-004	0.00000E+000	4.42911E+001	4.42911E+001	1.37900E-002	0.00000E+000	4.45807E+001
Tractors/Loaders/Backhoes	1.84400E-002	6.79300E-002	1.13737E+000	1.51000E-003	1.23000E-003	1.23000E-003	0.00000E+000	1.37794E+002	1.37794E+002	4.29000E-002	0.00000E+000	1.38695E+002
Welders	8.10000E-003	1.57880E-001	2.76920E-001	4.70000E-004	2.70000E-004	2.70000E-004	0.00000E+000	3.48208E+001	3.48208E+001	6.68000E-003	0.00000E+000	3.49610E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	9.00659E-001	9.45403E-001	1.17585E-002	0.00000E+000	9.86928E-001	9.86928E-001	0.00000E+000	1.28412E-006	1.28412E-006	0.00000E+000	0.00000E+000	6.40781E-007
Cranes	8.75761E-001	9.61721E-001	-3.06968E-002	0.00000E+000	9.83957E-001	9.82562E-001	0.00000E+000	1.19882E-006	1.19882E-006	0.00000E+000	0.00000E+000	1.19103E-006
Forklifts	8.94306E-001	9.55931E-001	4.09979E-002	0.00000E+000	9.89963E-001	9.89090E-001	0.00000E+000	1.16234E-006	1.16234E-006	0.00000E+000	0.00000E+000	1.28310E-006
Generator Sets	8.69840E-001	9.41101E-001	-8.25123E-002	0.00000E+000	9.83289E-001	9.83289E-001	0.00000E+000	1.24327E-006	1.24327E-006	0.00000E+000	0.00000E+000	1.24138E-006
Pavers	8.22820E-001	9.41018E-001	-2.17461E-001	0.00000E+000	9.77997E-001	9.76083E-001	0.00000E+000	1.17876E-006	1.17876E-006	0.00000E+000	0.00000E+000	1.17110E-006
Paving Equipment	7.88550E-001	9.30323E-001	-2.22710E-001	0.00000E+000	9.74283E-001	9.72044E-001	0.00000E+000	1.18049E-006	1.18049E-006	0.00000E+000	0.00000E+000	1.17283E-006
Rollers	8.75288E-001	9.52480E-001	-2.49679E-002	0.00000E+000	9.87398E-001	9.86301E-001	0.00000E+000	1.35467E-006	1.35467E-006	0.00000E+000	0.00000E+000	1.34587E-006
Tractors/Loaders/Backhoes	8.57309E-001	9.46808E-001	-2.29121E-003	0.00000E+000	9.86404E-001	9.85222E-001	0.00000E+000	1.16115E-006	1.16115E-006	0.00000E+000	0.00000E+000	1.15361E-006
Welders	9.00881E-001	4.92608E-001	1.94813E-001	0.00000E+000	9.87149E-001	9.87149E-001	0.00000E+000	1.43592E-006	1.43592E-006	0.00000E+000	0.00000E+000	1.14413E-006

Fugitive Dust Mitigation

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

		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	0.02	0.01	0.02	0.01	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.01	0.00	0.01	0.00	0.00	0.00

Operational Percent Reduction Summary

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

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	-0.01	0.13		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			
No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				

No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"				
No	Commute	Workplace Parking Charge				
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program				
	Commute	Commute Subtotal	0.00			
No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

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

Energy Mitigation Measures

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

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

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

No	Water Efficient Landscape	0.00	0.00

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 -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	ReapplicationRatePercent	10	0

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	35.00	104.00
tblConstructionPhase	NumDays	440.00	167.00
tblConstructionPhase	NumDays	35.00	167.00
tblConstructionPhase	PhaseEndDate	10/24/2019	5/31/2019
tblConstructionPhase	PhaseEndDate	1/21/2020	5/31/2019
tblConstructionPhase	PhaseStartDate	6/1/2019	1/8/2019
tblConstructionPhase	PhaseStartDate	6/1/2019	10/11/2018
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,089.81	0.00
tblEnergyUse	NT24NG	5,819.00	0.00
tblEnergyUse	T24E	425.62	0.00
tblEnergyUse	T24NG	21,834.49	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	37.95	0.00
tblFireplaces	NumberWood	24.15	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	9.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	9.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00

tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.21	0.00
tblSolidWaste	SolidWasteGenerationRate	80.77	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	4,495,627.77	0.00
tblWater	OutdoorWaterUseRate	2,978,703.37	0.00
tblWater	OutdoorWaterUseRate	2,834,200.11	0.00
tblWoodstoves	NumberCatalytic	3.45	0.00
tblWoodstoves	NumberNoncatalytic	3.45	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

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	0.2930	2.5880	2.1231	3.4000e-003	0.0247	0.1582	0.1829	6.6600e-003	0.1482	0.1548	0.0000	297.4170	297.4170	0.0698	0.0000	298.8820
2019	2.5417	4.4538	4.0140	6.6100e-003	0.0523	0.2627	0.3150	0.0141	0.2465	0.2606	0.0000	569.2834	569.2834	0.1308	0.0000	572.0292
Total	**2.8348**	**7.0417**	**6.1371**	**0.0100**	**0.0770**	**0.4209**	**0.4979**	**0.0207**	**0.3947**	**0.4154**	**0.0000**	**866.7004**	**866.7004**	**0.2005**	**0.0000**	**870.9111**

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	0.0505	0.2607	2.1831	3.4000e-003	0.0247	3.2800e-003	0.0280	6.6600e-003	3.2100e-003	9.8700e-003	0.0000	297.4167	297.4167	0.0698	0.0000	298.8817
2019	2.1356	0.4871	4.2007	6.6100e-003	0.0523	6.2000e-003	0.0585	0.0141	6.0600e-003	0.0201	0.0000	569.2828	569.2828	0.1308	0.0000	572.0286
Total	**2.1861**	**0.7478**	**6.3838**	**0.0100**	**0.0770**	**9.4800e-003**	**0.0865**	**0.0207**	**9.2700e-003**	**0.0300**	**0.0000**	**866.6995**	**866.6995**	**0.2005**	**0.0000**	**870.9102**

	ROG	**NOx**	**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	**22.88**	**89.38**	**-4.02**	**0.00**	**0.00**	**97.75**	**82.63**	**0.00**	**97.65**	**92.78**	**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	0.0172	6.5500e-003	0.5662	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**0.0172**	**6.5500e-003**	**0.5662**	**3.0000e-005**	**0.0000**	**3.1100e-003**	**3.1100e-003**	**0.0000**	**3.1100e-003**	**3.1100e-003**	**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	0.0172	6.5500e-003	0.5662	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Total	**0.0172**	**6.5500e-003**	**0.5662**	**3.0000e-005**	**0.0000**	**3.1100e-003**	**3.1100e-003**	**0.0000**	**3.1100e-003**	**3.1100e-003**	**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	10/11/2018	5/31/2019	5	167	
2	Paving	Paving	10/11/2018	5/31/2019	5	167	
3	Architectural Coating	Architectural Coating	1/8/2019	5/31/2019	5	104	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 251,505; Residential Outdoor: 83,835; Non-Residential Indoor: 163,350; Non-Residential Outdoor: 54,450 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	3	7.00	226	0.29
Building Construction	Forklifts	9	8.00	89	0.20
Building Construction	Generator Sets	3	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	9	7.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	27	71.00	25.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2322	2.0237	1.5253	2.3300e-003		0.1300	0.1300		0.1222	0.1222	0.0000	205.9896	205.9896	0.0504	0.0000	207.0482
Total	**0.2322**	**2.0237**	**1.5253**	**2.3300e-003**		**0.1300**	**0.1300**		**0.1222**	**0.1222**	**0.0000**	**205.9896**	**205.9896**	**0.0504**	**0.0000**	**207.0482**

3.2 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0900e-003	0.0572	0.0896	1.7000e-004	4.7200e-003	8.4000e-004	5.5600e-003	1.3500e-003	7.7000e-004	2.1200e-003	0.0000	15.1131	15.1131	1.1000e-004	0.0000	15.1155
Worker	5.8200e-003	7.7400e-003	0.0725	2.0000e-004	0.0165	1.2000e-004	0.0166	4.3900e-003	1.1000e-004	4.5000e-003	0.0000	14.2371	14.2371	7.0000e-004	0.0000	14.2518
Total	**0.0129**	**0.0649**	**0.1621**	**3.7000e-004**	**0.0212**	**9.6000e-004**	**0.0222**	**5.7400e-003**	**8.8000e-004**	**6.6200e-003**	**0.0000**	**29.3502**	**29.3502**	**8.1000e-004**	**0.0000**	**29.3673**

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	0.0284	0.1648	1.5148	2.3300e-003		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	205.9894	205.9894	0.0504	0.0000	207.0480
Total	**0.0284**	**0.1648**	**1.5148**	**2.3300e-003**		**1.7700e-003**	**1.7700e-003**		**1.7700e-003**	**1.7700e-003**	**0.0000**	**205.9894**	**205.9894**	**0.0504**	**0.0000**	**207.0480**

3.2 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0900e-003	0.0572	0.0896	1.7000e-004	4.7200e-003	8.4000e-004	5.5600e-003	1.3500e-003	7.7000e-004	2.1200e-003	0.0000	15.1131	15.1131	1.1000e-004	0.0000	15.1155
Worker	5.8200e-003	7.7400e-003	0.0725	2.0000e-004	0.0165	1.2000e-004	0.0166	4.3900e-003	1.1000e-004	4.5000e-003	0.0000	14.2371	14.2371	7.0000e-004	0.0000	14.2518
Total	**0.0129**	**0.0649**	**0.1621**	**3.7000e-004**	**0.0212**	**9.6000e-004**	**0.0222**	**5.7400e-003**	**8.8000e-004**	**6.6200e-003**	**0.0000**	**29.3502**	**29.3502**	**8.1000e-004**	**0.0000**	**29.3673**

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	0.3845	3.4278	2.7992	4.3800e-003		0.2101	0.2101		0.1976	0.1976	0.0000	382.7907	382.7907	0.0931	0.0000	384.7466
Total	**0.3845**	**3.4278**	**2.7992**	**4.3800e-003**		**0.2101**	**0.2101**		**0.1976**	**0.1976**	**0.0000**	**382.7907**	**382.7907**	**0.0931**	**0.0000**	**384.7466**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0124	0.0978	0.1608	3.2000e-004	8.8600e-003	1.4700e-003	0.0103	2.5400e-003	1.3500e-003	3.8900e-003	0.0000	27.9128	27.9128	2.1000e-004	0.0000	27.9171
Worker	0.0101	0.0134	0.1253	3.8000e-004	0.0310	2.3000e-004	0.0313	8.2500e-003	2.1000e-004	8.4500e-003	0.0000	25.7880	25.7880	1.2400e-003	0.0000	25.8140
Total	**0.0226**	**0.1112**	**0.2861**	**7.0000e-004**	**0.0399**	**1.7000e-003**	**0.0416**	**0.0108**	**1.5600e-003**	**0.0123**	**0.0000**	**53.7008**	**53.7008**	**1.4500e-003**	**0.0000**	**53.7311**

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	0.0534	0.3098	2.8467	4.3800e-003		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003	0.0000	382.7903	382.7903	0.0931	0.0000	384.7461
Total	**0.0534**	**0.3098**	**2.8467**	**4.3800e-003**		**3.3200e-003**	**3.3200e-003**		**3.3200e-003**	**3.3200e-003**	**0.0000**	**382.7903**	**382.7903**	**0.0931**	**0.0000**	**384.7461**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0124	0.0978	0.1608	3.2000e-004	8.8600e-003	1.4700e-003	0.0103	2.5400e-003	1.3500e-003	3.8900e-003	0.0000	27.9128	27.9128	2.1000e-004	0.0000	27.9171
Worker	0.0101	0.0134	0.1253	3.8000e-004	0.0310	2.3000e-004	0.0313	8.2500e-003	2.1000e-004	8.4500e-003	0.0000	25.7880	25.7880	1.2400e-003	0.0000	25.8140
Total	**0.0226**	**0.1112**	**0.2861**	**7.0000e-004**	**0.0399**	**1.7000e-003**	**0.0416**	**0.0108**	**1.5600e-003**	**0.0123**	**0.0000**	**53.7008**	**53.7008**	**1.4500e-003**	**0.0000**	**53.7311**

3.3 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0467	0.4977	0.4203	6.5000e-004		0.0272	0.0272		0.0250	0.0250	0.0000	59.0694	59.0694	0.0184	0.0000	59.4555
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0467**	**0.4977**	**0.4203**	**6.5000e-004**		**0.0272**	**0.0272**		**0.0250**	**0.0250**	**0.0000**	**59.0694**	**59.0694**	**0.0184**	**0.0000**	**59.4555**

3.3 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2300e-003	1.6300e-003	0.0153	4.0000e-005	3.4900e-003	3.0000e-005	3.5100e-003	9.3000e-004	2.0000e-005	9.5000e-004	0.0000	3.0078	3.0078	1.5000e-004	0.0000	3.0110
Total	**1.2300e-003**	**1.6300e-003**	**0.0153**	**4.0000e-005**	**3.4900e-003**	**3.0000e-005**	**3.5100e-003**	**9.3000e-004**	**2.0000e-005**	**9.5000e-004**	**0.0000**	**3.0078**	**3.0078**	**1.5000e-004**	**0.0000**	**3.0110**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.9600e-003	0.0293	0.4909	6.5000e-004		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	59.0693	59.0693	0.0184	0.0000	59.4555
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.9600e-003**	**0.0293**	**0.4909**	**6.5000e-004**		**5.3000e-004**	**5.3000e-004**		**5.3000e-004**	**5.3000e-004**	**0.0000**	**59.0693**	**59.0693**	**0.0184**	**0.0000**	**59.4555**

3.3 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2300e-003	1.6300e-003	0.0153	4.0000e-005	3.4900e-003	3.0000e-005	3.5100e-003	9.3000e-004	2.0000e-005	9.5000e-004	0.0000	3.0078	3.0078	1.5000e-004	0.0000	3.0110
Total	**1.2300e-003**	**1.6300e-003**	**0.0153**	**4.0000e-005**	**3.4900e-003**	**3.0000e-005**	**3.5100e-003**	**9.3000e-004**	**2.0000e-005**	**9.5000e-004**	**0.0000**	**3.0078**	**3.0078**	**1.5000e-004**	**0.0000**	**3.0110**

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	0.0777	0.8140	0.7829	1.2200e-003		0.0441	0.0441		0.0406	0.0406	0.0000	109.2151	109.2151	0.0346	0.0000	109.9407
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0777**	**0.8140**	**0.7829**	**1.2200e-003**		**0.0441**	**0.0441**		**0.0406**	**0.0406**	**0.0000**	**109.2151**	**109.2151**	**0.0346**	**0.0000**	**109.9407**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1400e-003	2.8400e-003	0.0265	8.0000e-005	6.5600e-003	5.0000e-005	6.6000e-003	1.7400e-003	4.0000e-005	1.7900e-003	0.0000	5.4482	5.4482	2.6000e-004	0.0000	5.4537
Total	**2.1400e-003**	**2.8400e-003**	**0.0265**	**8.0000e-005**	**6.5600e-003**	**5.0000e-005**	**6.6000e-003**	**1.7400e-003**	**4.0000e-005**	**1.7900e-003**	**0.0000**	**5.4482**	**5.4482**	**2.6000e-004**	**0.0000**	**5.4537**

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	0.0150	0.0551	0.9226	1.2200e-003		1.0000e-003	1.0000e-003		1.0000e-003	1.0000e-003	0.0000	109.2150	109.2150	0.0346	0.0000	109.9406
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0150**	**0.0551**	**0.9226**	**1.2200e-003**		**1.0000e-003**	**1.0000e-003**		**1.0000e-003**	**1.0000e-003**	**0.0000**	**109.2150**	**109.2150**	**0.0346**	**0.0000**	**109.9406**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1400e-003	2.8400e-003	0.0265	8.0000e-005	6.5600e-003	5.0000e-005	6.6000e-003	1.7400e-003	4.0000e-005	1.7900e-003	0.0000	5.4482	5.4482	2.6000e-004	0.0000	5.4537
Total	**2.1400e-003**	**2.8400e-003**	**0.0265**	**8.0000e-005**	**6.5600e-003**	**5.0000e-005**	**6.6000e-003**	**1.7400e-003**	**4.0000e-005**	**1.7900e-003**	**0.0000**	**5.4482**	**5.4482**	**2.6000e-004**	**0.0000**	**5.4537**

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	2.0390					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0139	0.0954	0.0958	1.5000e-004		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	13.2769	13.2769	1.1200e-003	0.0000	13.3005
Total	**2.0529**	**0.0954**	**0.0958**	**1.5000e-004**		**6.7000e-003**	**6.7000e-003**		**6.7000e-003**	**6.7000e-003**	**0.0000**	**13.2769**	**13.2769**	**1.1200e-003**	**0.0000**	**13.3005**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9100e-003	2.5300e-003	0.0236	7.0000e-005	5.8400e-003	4.0000e-005	5.8800e-003	1.5500e-003	4.0000e-005	1.5900e-003	0.0000	4.8517	4.8517	2.3000e-004	0.0000	4.8566
Total	**1.9100e-003**	**2.5300e-003**	**0.0236**	**7.0000e-005**	**5.8400e-003**	**4.0000e-005**	**5.8800e-003**	**1.5500e-003**	**4.0000e-005**	**1.5900e-003**	**0.0000**	**4.8517**	**4.8517**	**2.3000e-004**	**0.0000**	**4.8566**

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	2.0390					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5500e-003	5.6900e-003	0.0953	1.5000e-004		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	13.2769	13.2769	1.1200e-003	0.0000	13.3005
Total	**2.0406**	**5.6900e-003**	**0.0953**	**1.5000e-004**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**	**0.0000**	**13.2769**	**13.2769**	**1.1200e-003**	**0.0000**	**13.3005**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9100e-003	2.5300e-003	0.0236	7.0000e-005	5.8400e-003	4.0000e-005	5.8800e-003	1.5500e-003	4.0000e-005	1.5900e-003	0.0000	4.8517	4.8517	2.3000e-004	0.0000	4.8566
Total	**1.9100e-003**	**2.5300e-003**	**0.0236**	**7.0000e-005**	**5.8400e-003**	**4.0000e-005**	**5.8800e-003**	**1.5500e-003**	**4.0000e-005**	**1.5900e-003**	**0.0000**	**4.8517**	**4.8517**	**2.3000e-004**	**0.0000**	**4.8566**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**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	0.0172	6.5500e-003	0.5662	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Unmitigated	0.0172	6.5500e-003	0.5662	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	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	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0172	6.5500e-003	0.5662	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Total	**0.0172**	**6.5500e-003**	**0.5662**	**3.0000e-005**		**3.1100e-003**	**3.1100e-003**		**3.1100e-003**	**3.1100e-003**	**0.0000**	**0.9218**	**0.9218**	**9.0000e-004**	**0.0000**	**0.9407**

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	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0172	6.5500e-003	0.5662	3.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	0.0000	0.9218	0.9218	9.0000e-004	0.0000	0.9407
Total	**0.0172**	**6.5500e-003**	**0.5662**	**3.0000e-005**		**3.1100e-003**	**3.1100e-003**		**3.1100e-003**	**3.1100e-003**	**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**

7.2 Water by Land Use

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**

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	0.01	0.92	0.00	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.82	0.88	-0.01	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.79	0.93	-0.17	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	Tier 4 Final	1	1	Level 2	15.00
Cranes	Diesel	Tier 4 Final	3	3	Level 2	15.00
Forklifts	Diesel	Tier 4 Final	9	9	Level 2	15.00
Generator Sets	Diesel	Tier 4 Final	3	3	Level 2	15.00
Pavers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Paving Equipment	Diesel	Tier 4 Final	2	2	Level 2	15.00
Rollers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	9	9	Level 2	15.00
Welders	Diesel	Tier 4 Final	3	3	Level 2	15.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	1.38600E-002	9.54400E-002	9.57500E-002	1.50000E-004	6.70000E-003	6.70000E-003	0.00000E+000	1.32769E+001	1.32769E+001	1.12000E-003	0.00000E+000	1.33005E+001
Cranes	1.13050E-001	1.34877E+000	5.08770E-001	1.24000E-003	5.76300E-002	5.30200E-002	0.00000E+000	1.11757E+002	1.11757E+002	3.51600E-002	0.00000E+000	1.12496E+002
Forklifts	1.24950E-001	1.11153E+000	9.01880E-001	1.15000E-003	8.70700E-002	8.01000E-002	0.00000E+000	1.03747E+002	1.03747E+002	3.26400E-002	0.00000E+000	1.04432E+002
Generator Sets	1.16570E-001	9.75550E-001	9.34730E-001	1.65000E-003	5.97200E-002	5.97200E-002	0.00000E+000	1.41584E+002	1.41584E+002	9.40000E-003	0.00000E+000	1.41782E+002
Pavers	4.83500E-002	5.28720E-001	4.67330E-001	7.60000E-004	2.58700E-002	2.38000E-002	0.00000E+000	6.81968E+001	6.81968E+001	2.14600E-002	0.00000E+000	6.86473E+001
Paving Equipment	3.64400E-002	3.94090E-001	4.15760E-001	6.70000E-004	1.94500E-002	1.79000E-002	0.00000E+000	6.05235E+001	6.05235E+001	1.90400E-002	0.00000E+000	6.09233E+001
Rollers	3.96500E-002	3.88880E-001	3.20150E-001	4.40000E-004	2.60100E-002	2.39300E-002	0.00000E+000	3.95642E+001	3.95642E+001	1.24500E-002	0.00000E+000	3.98256E+001
Tractors/Loaders/ Backhoes	1.60690E-001	1.60373E+000	1.52193E+000	2.04000E-003	1.09520E-001	1.00760E-001	0.00000E+000	1.84543E+002	1.84543E+002	5.80600E-002	0.00000E+000	1.85762E+002
Welders	1.01410E-001	4.11900E-001	4.57210E-001	6.40000E-004	2.61700E-002	2.61700E-002	0.00000E+000	4.71493E+001	4.71493E+001	8.29000E-003	0.00000E+000	4.73233E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	1.55000E-003	5.69000E-003	9.52900E-002	1.50000E-004	1.00000E-004	1.00000E-004	0.00000E+000	1.32769E+001	1.32769E+001	1.12000E-003	0.00000E+000	1.33005E+001
Cranes	1.52000E-002	5.59900E-002	5.57400E-001	1.24000E-003	1.01000E-003	1.01000E-003	0.00000E+000	1.11757E+002	1.11757E+002	3.51600E-002	0.00000E+000	1.12496E+002
Forklifts	1.41600E-002	5.21400E-002	8.72920E-001	1.15000E-003	9.40000E-004	9.40000E-004	0.00000E+000	1.03747E+002	1.03747E+002	3.26400E-002	0.00000E+000	1.04432E+002
Generator Sets	1.64800E-002	6.06900E-002	1.01612E+000	1.65000E-003	1.10000E-003	1.10000E-003	0.00000E+000	1.41584E+002	1.41584E+002	9.40000E-003	0.00000E+000	1.41782E+002
Pavers	9.28000E-003	3.41700E-002	5.72140E-001	7.60000E-004	6.20000E-004	6.20000E-004	0.00000E+000	6.81967E+001	6.81967E+001	2.14600E-002	0.00000E+000	6.86472E+001
Paving Equipment	8.27000E-003	3.04600E-002	5.10020E-001	6.70000E-004	5.50000E-004	5.50000E-004	0.00000E+000	6.05234E+001	6.05234E+001	1.90400E-002	0.00000E+000	6.09233E+001
Rollers	5.37000E-003	1.97900E-002	3.31300E-001	4.40000E-004	3.60000E-004	3.60000E-004	0.00000E+000	3.95642E+001	3.95642E+001	1.24500E-002	0.00000E+000	3.98256E+001
Tractors/Loaders/Backhoes	2.49700E-002	9.19900E-002	1.54005E+000	2.04000E-003	1.66000E-003	1.66000E-003	0.00000E+000	1.84542E+002	1.84542E+002	5.80600E-002	0.00000E+000	1.85762E+002
Welders	1.09700E-002	2.13770E-001	3.74960E-001	6.40000E-004	3.70000E-004	3.70000E-004	0.00000E+000	4.71492E+001	4.71492E+001	8.29000E-003	0.00000E+000	4.73232E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	8.88167E-001	9.40381E-001	4.80418E-003	0.00000E+000	9.85075E-001	9.85075E-001	0.00000E+000	1.50637E-006	1.50637E-006	0.00000E+000	0.00000E+000	1.50371E-006
Cranes	8.65546E-001	9.58488E-001	-9.55835E-002	0.00000E+000	9.82474E-001	9.80951E-001	0.00000E+000	1.16323E-006	1.16323E-006	0.00000E+000	0.00000E+000	1.15560E-006
Forklifts	8.86675E-001	9.53092E-001	3.21107E-002	0.00000E+000	9.89204E-001	9.88265E-001	0.00000E+000	1.15666E-006	1.15666E-006	0.00000E+000	0.00000E+000	1.14907E-006
Generator Sets	8.58626E-001	9.37789E-001	-8.70733E-002	0.00000E+000	9.81581E-001	9.81581E-001	0.00000E+000	1.20070E-006	1.20070E-006	0.00000E+000	0.00000E+000	1.19902E-006
Pavers	8.08066E-001	9.35372E-001	-2.24274E-001	0.00000E+000	9.76034E-001	9.73950E-001	0.00000E+000	1.17308E-006	1.17308E-006	0.00000E+000	0.00000E+000	1.16538E-006
Paving Equipment	7.73052E-001	9.22708E-001	-2.26717E-001	0.00000E+000	9.71722E-001	9.69274E-001	0.00000E+000	1.15658E-006	1.15658E-006	0.00000E+000	0.00000E+000	1.14899E-006
Rollers	8.64565E-001	9.49110E-001	-3.48274E-002	0.00000E+000	9.86159E-001	9.84956E-001	0.00000E+000	1.26377E-006	1.26377E-006	0.00000E+000	0.00000E+000	1.25547E-006
Tractors/Loaders/Backhoes	8.44608E-001	9.42640E-001	-1.19059E-002	0.00000E+000	9.84843E-001	9.83525E-001	0.00000E+000	1.19214E-006	1.19214E-006	0.00000E+000	0.00000E+000	1.18431E-006
Welders	8.91825E-001	4.81015E-001	1.79895E-001	0.00000E+000	9.85862E-001	9.85862E-001	0.00000E+000	1.27255E-006	1.27255E-006	0.00000E+000	0.00000E+000	1.26788E-006

Fugitive Dust Mitigation

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

		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	0.01	0.00	0.01	0.00	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.06	0.02	0.06	0.02	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.01	0.00	0.01	0.00	0.00	0.00

Operational Percent Reduction Summary

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

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.20	0.49		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			
No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				

No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"				
No	Commute	Workplace Parking Charge				
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program				
	Commute	Commute Subtotal	0.00			
No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

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

Energy Mitigation Measures

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

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

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

No	Water Efficient Landscape	0.00	0.00

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	3.6	15.3	34.9	8.6	1.6	7.0	2.9	1.4	1.5	3,212.1
Grading/Excavation	3.5	17.6	44.1	8.8	1.8	7.0	3.0	1.5	1.5	5,501.6
Drainage/Utilities/Sub-Grade	3.4	15.7	34.3	8.8	1.8	7.0	3.0	1.6	1.5	3,431.0
Paving	1.3	9.0	11.3	0.7	0.7	-	0.6	0.6	-	1,632.0
Maximum (pounds/day)	3.6	17.6	44.1	8.8	1.8	7.0	3.0	1.6	1.5	5,501.6
Total (tons/construction project)	0.1	0.5	1.2	0.2	0.1	0.2	0.1	0.0	0.0	134.3

Notes: Project Start Year -> 2016
Project Length (months) -> 3
Total Project Area (acres) -> 3
Maximum Area Disturbed/Day (acres) -> 1
Total Soil Imported/Exported (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	1.6	7.0	15.9	3.9	0.7	3.2	1.3	0.7	0.7	1,460.1
Grading/Excavation	1.6	8.0	20.0	4.0	0.8	3.2	1.4	0.7	0.7	2,500.7
Drainage/Utilities/Sub-Grade	1.5	7.1	15.6	4.0	0.8	3.2	1.4	0.7	0.7	1,559.5
Paving	0.6	4.1	5.1	0.3	0.3	-	0.3	0.3	-	741.8
Maximum (kilograms/day)	1.6	8.0	20.0	4.0	0.8	3.2	1.4	0.7	0.7	2,500.7
Total (megagrams/construction project)	0.1	0.5	1.1	0.2	0.0	0.2	0.1	0.0	0.0	121.9

Notes: Project Start Year -> 2016
Project Length (months) -> 3
Total Project Area (hectares) -> 1
Maximum Area Disturbed/Day (hectares) -> 0
Total Soil Imported/Exported ($meters^3$/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	2016	Enter a Year between 2009 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	3.00	months
Predominant Soil/Site Type: Enter 1, 2, or 3	2	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	0.98	miles
Total Project Area	2.80	acres
Maximum Area Disturbed/Day	0.70	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.00	yd^3/day
Soil Exported	310.00	yd^3/day
Average Truck Capacity	20	yd^3 (assume 20 if unknown)

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		0.30	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation		1.35	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade		0.90	0.00	0.00	0.00	0.00	0.00	0.00
Paving		0.45	0.00	0.00	0.00	0.00	0.00	0.00
Totals	0.00	3.00						

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions

User Input	User Override of Soil Hauling Defaults	Default Values
Miles/round trip		30
Round trips/day		16
Vehicle miles traveled/day (calculated)		465

Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.16	8.45	0.72	0.17	0.10	1720.56
Tons per contruction period	0.00	0.13	0.01	0.00	0.00	25.55

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions

	User Override of Worker Commute Default Values	Default Values
Miles/ one-way trip		20
One-way trips/day		2
No. of employees: Grubbing/Land Clearing		5
No. of employees: Grading/Excavation		18
No. of employees: Drainage/Utilities/Sub-Grade		15
No. of employees: Paving		11

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Grading/Excavation (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Paving (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Grubbing/Land Clearing (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Grading/Excavation (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Paving (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Pounds per day - Grubbing/Land Clearing	0.076	0.093	0.861	0.021	0.009	197.546
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.003	0.000	0.000	0.652
Pounds per day - Grading/Excavation	0.266	0.324	3.013	0.073	0.031	691.411
Tons per const. Period - Grading/Excavation	0.004	0.005	0.045	0.001	0.000	10.267
Pounds per day - Drainage/Utilities/Sub-Grade	0.228	0.278	2.582	0.062	0.026	592.638
Tons per const. Period - Drain/Util/Sub-Grade	0.002	0.003	0.026	0.001	0.000	5.867
Pounds per day - Paving	0.171	0.208	1.937	0.047	0.020	444.479
Tons per const. Period - Paving	0.001	0.001	0.010	0.000	0.000	2.200
tons per construction period	0.007	0.009	0.083	0.002	0.001	18.987

Water truck default values can be 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	0.49
Pound per day - Grading/Excavation	0.01	0.73	0.06	0.01	0.01	148.00
Tons per const. Period - Grading/Excavation	0.00	0.01	0.00	0.00	0.00	2.20
Pound per day - Drainage/Utilities/Subgrade	0.01	0.73	0.06	0.01	0.01	148.00
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.01	0.00	0.00	0.00	1.47

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0.7	7.0	0.0	1.5	0.0
Fugitive Dust - Grading/Excavation		0.7	7.0	0.1	1.5	0.0
Fugitive Dust - Drainage/Utilities/Subgrade		0.7	7.0	0.1	1.5	0.0

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default 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	1.28	4.41	13.72	0.64	0.59	943.69
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Scrapers	1.46	7.25	17.70	0.71	0.66	1608.02
	2	Signal Boards	0.73	2.73	2.64	0.19	0.18	314.87
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	3.5	14.4	34.1	1.5	1.4	2866.6
	Grubbing/Land Clearing	tons per phase	0.0	0.0	0.1	0.0	0.0	9.5

Grading/Excavation	Default 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	1.07	3.48	10.38	0.58	0.54	671.02
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
1.00	1	Rubber Tired Loaders	0.52	3.12	6.51	0.22	0.20	662.62
1.00	2	Scrapers	1.46	7.25	17.70	0.71	0.66	1608.02
0.00	2	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	3.0	13.9	34.6	1.5	1.4	2941.7
	Grading	tons per phase	0.0	0.2	0.5	0.0	0.0	43.7

Drainage/Utilities/Subgrade 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	1.07	3.48	10.38	0.58	0.54	671.02
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2	Scrapers	1.46	7.25	17.70	0.71	0.66	1608.02
0.00	2	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Trenchers	0.59	2.10	4.94	0.39	0.36	376.85
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	3.2	13.0	33.3	1.7	1.6	2690.3
	Drainage	tons per phase	0.0	0.1	0.3	0.0	0.0	26.6

Paving	Default 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
1.00	3	Rollers	0.35	1.51	3.09	0.23	0.21	279.53
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	1.1	7.0	11.1	0.6	0.6	1187.5
	Paving	tons per phase	0.0	0.0	0.1	0.0	0.0	5.9
Total Emissions all Phases (tons per construction period) =>			0.1	0.4	1.0	0.0	0.0	85.7

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment		Default Values Horsepower		Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		106		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		10		8
Concrete/Industrial Saws		64		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		142		8
Excavators		163		8
Forklifts		89		8
Generator Sets		66		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		26		8
Pumps		53		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		20		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		45		8

0

END OF DATA ENTRY SHEET

Appendix C

DRILLING AND BLASTING EMISSION 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 - 2020 Operations

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

1.2 Other Project Characteristics

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

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Operations Only

Vehicle Trips - LLG 2015

Woodstoves - No woodburning hearths

Mobile Land Use Mitigation -

Area Mitigation - Rule 67

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	100
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	100
tblConstructionPhase	NumDays	200.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	183.70	300.60
tblFireplaces	NumberWood	116.90	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	11.31
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	11.31
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	11.31
tblWoodstoves	NumberCatalytic	16.70	0.00
tblWoodstoves	NumberNoncatalytic	16.70	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

	ROG	NOx	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	4.1602	0.0288	2.4896	1.3000e-004		0.0302	0.0302		0.0300	0.0300	0.0000	240.8186	240.8186	8.4900e-003	4.3400e-003	242.3425
Energy	0.0498	0.4256	0.1811	2.7200e-003		0.0344	0.0344		0.0344	0.0344	0.0000	1,270.5258	1,270.5258	0.0408	0.0155	1,276.1902
Mobile	2.0593	4.5576	21.3268	0.0589	4.0558	0.0675	4.1233	1.0847	0.0623	1.1470	0.0000	4,087.9368	4,087.9368	0.1578	0.0000	4,091.2502
Waste						0.0000	0.0000		0.0000	0.0000	79.5420	0.0000	79.5420	4.7008	0.0000	178.2588
Water						0.0000	0.0000		0.0000	0.0000	6.9039	157.5566	164.4605	0.7154	0.0181	185.0819
Total	**6.2693**	**5.0120**	**23.9974**	**0.0617**	**4.0558**	**0.1321**	**4.1879**	**1.0847**	**0.1267**	**1.2115**	**86.4459**	**5,756.8378**	**5,843.2838**	**5.6233**	**0.0379**	**5,973.1236**

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	3.3759	0.0288	2.4896	1.3000e-004		0.0302	0.0302		0.0300	0.0300	0.0000	240.8186	240.8186	8.4900e-003	4.3400e-003	242.3425
Energy	0.0439	0.3752	0.1597	2.3900e-003		0.0303	0.0303		0.0303	0.0303	0.0000	1,178.8402	1,178.8402	0.0383	0.0142	1,184.0353
Mobile	2.0593	4.5576	21.3268	0.0589	4.0558	0.0675	4.1233	1.0847	0.0623	1.1470	0.0000	4,087.9368	4,087.9368	0.1578	0.0000	4,091.2502
Waste						0.0000	0.0000		0.0000	0.0000	39.7710	0.0000	39.7710	2.3504	0.0000	89.1294
Water						0.0000	0.0000		0.0000	0.0000	5.5231	139.0360	144.5591	0.5728	0.0145	161.0919
Total	**5.4791**	**4.9616**	**23.9760**	**0.0614**	**4.0558**	**0.1280**	**4.1838**	**1.0847**	**0.1226**	**1.2074**	**45.2941**	**5,646.6317**	**5,691.9258**	**3.1277**	**0.0330**	**5,767.8493**

	ROG	NOx	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	**12.60**	**1.01**	**0.09**	**0.53**	**0.00**	**3.09**	**0.10**	**0.00**	**3.22**	**0.34**	**47.60**	**1.91**	**2.59**	**44.38**	**12.87**	**3.44**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	12/31/2015	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40

Trips and VMT

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

3.1 Mitigation Measures Construction

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.0593	4.5576	21.3268	0.0589	4.0558	0.0675	4.1233	1.0847	0.0623	1.1470	0.0000	4,087.9368	4,087.9368	0.1578	0.0000	4,091.2502
Unmitigated	2.0593	4.5576	21.3268	0.0589	4.0558	0.0675	4.1233	1.0847	0.0623	1.1470	0.0000	4,087.9368	4,087.9368	0.1578	0.0000	4,091.2502

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	3,777.54	3,777.54	3777.54	10,786,023	10,786,023
Total	3,777.54	3,777.54	3,777.54	10,786,023	10,786,023

4.3 Trip Type Information

	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

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
NaturalGas Mitigated	0.0439	0.3752	0.1597	2.3900e-003		0.0303	0.0303		0.0303	0.0303	0.0000	434.5072	434.5072	8.3300e-003	7.9700e-003	437.1516
NaturalGas Unmitigated	0.0498	0.4256	0.1811	2.7200e-003		0.0344	0.0344		0.0344	0.0344	0.0000	492.8823	492.8823	9.4500e-003	9.0400e-003	495.8819
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	744.3330	744.3330	0.0300	6.2000e-003	746.8837
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	777.6435	777.6435	0.0313	6.4800e-003	780.3083

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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	9.23627e+006	0.0498	0.4256	0.1811	2.7200e-003		0.0344	0.0344		0.0344	0.0344	0.0000	492.8823	492.8823	9.4500e-003	9.0400e-003	495.8819
Total		**0.0498**	**0.4256**	**0.1811**	**2.7200e-003**		**0.0344**	**0.0344**		**0.0344**	**0.0344**	**0.0000**	**492.8823**	**492.8823**	**9.4500e-003**	**9.0400e-003**	**495.8819**

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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	8.14236e+006	0.0439	0.3752	0.1597	2.3900e-003		0.0303	0.0303		0.0303	0.0303	0.0000	434.5072	434.5072	8.3300e-003	7.9700e-003	437.1516
Total		**0.0439**	**0.3752**	**0.1597**	**2.3900e-003**		**0.0303**	**0.0303**		**0.0303**	**0.0303**	**0.0000**	**434.5072**	**434.5072**	**8.3300e-003**	**7.9700e-003**	**437.1516**

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	2.37951e+006	777.6435	0.0313	6.4800e-003	780.3083
Total		**777.6435**	**0.0313**	**6.4800e-003**	**780.3083**

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	2.27758e+006	744.3330	0.0300	6.2000e-003	746.8837
Total		**744.3330**	**0.0300**	**6.2000e-003**	**746.8837**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.3759	0.0288	2.4896	1.3000e-004		0.0302	0.0302		0.0300	0.0300	0.0000	240.8186	240.8186	8.4900e-003	4.3400e-003	242.3425
Unmitigated	4.1602	0.0288	2.4896	1.3000e-004		0.0302	0.0302		0.0300	0.0300	0.0000	240.8186	240.8186	8.4900e-003	4.3400e-003	242.3425

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	1.1171					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.9434					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0239	0.0000	1.3000e-003	0.0000		0.0165	0.0165		0.0164	0.0164	0.0000	236.7675	236.7675	4.5400e-003	4.3400e-003	238.2085
Landscaping	0.0758	0.0288	2.4883	1.3000e-004		0.0137	0.0137		0.0137	0.0137	0.0000	4.0511	4.0511	3.9500e-003	0.0000	4.1340
Total	**4.1602**	**0.0288**	**2.4896**	**1.3000e-004**		**0.0302**	**0.0302**		**0.0300**	**0.0300**	**0.0000**	**240.8186**	**240.8186**	**8.4900e-003**	**4.3400e-003**	**242.3425**

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	0.5529					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.7234					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0239	0.0000	1.3000e-003	0.0000		0.0165	0.0165		0.0164	0.0164	0.0000	236.7675	236.7675	4.5400e-003	4.3400e-003	238.2085
Landscaping	0.0758	0.0288	2.4883	1.3000e-004		0.0137	0.0137		0.0137	0.0137	0.0000	4.0511	4.0511	3.9500e-003	0.0000	4.1340
Total	**3.3759**	**0.0288**	**2.4896**	**1.3000e-004**		**0.0302**	**0.0302**		**0.0300**	**0.0300**	**0.0000**	**240.8186**	**240.8186**	**8.4900e-003**	**4.3400e-003**	**242.3425**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	164.4605	0.7154	0.0181	185.0819
Mitigated	144.5591	0.5728	0.0145	161.0919

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
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		**164.4605**	**0.7154**	**0.0181**	**185.0819**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.17018	15.1413	6.1000e-004	1.3000e-004	15.1932
Single Family Housing	17.4092 / 13.7192	129.4178	0.5722	0.0144	145.8988
Total		**144.5591**	**0.5728**	**0.0145**	**161.0919**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	39.7710	2.3504	0.0000	89.1294
Unmitigated	79.5420	4.7008	0.0000	178.2588

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
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		**79.5420**	**4.7008**	**0.0000**	**178.2588**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.15	0.0305	1.8000e-003	0.0000	0.0682
Single Family Housing	195.775	39.7406	2.3486	0.0000	89.0612
Total		**39.7710**	**2.3504**	**0.0000**	**89.1294**

9.0 Operational Offroad

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

10.0 Vegetation

Valiano - 2020 Operations

San Diego County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Concrete/Industrial Saws	Diesel	No Change	0	1	No Change	0.00
Excavators	Diesel	No Change	0	3	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	2	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												

Fugitive Dust Mitigation

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

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	50.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	7.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.28	4.28	4.28	4.32	4.28
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	11.85	11.84	11.84	12.13	11.86	11.86	0.00	11.84	11.84	11.85	11.84	11.84
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	20.00	11.75	12.10	19.94	19.55	12.96
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting: Low Density Suburban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00	0.00	0.00	
No	Land Use	Increase Diversity	0.14	0.38		
No	Land Use	Improve Walkability Design	0.00	0.00		
No	Land Use	Improve Destination Accessibility	0.00	0.00		
No	Land Use	Increase Transit Accessibility	0.25	0.00		
No	Land Use	Integrate Below Market Rate Housing	0.00	0.00		
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network	0.00			
No	Neighborhood Enhancements	Provide Traffic Calming Measures	0.25	25.00	25.00	
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00	0.00		
No	Parking Policy Pricing	Unbundle Parking Costs	0.00	0.00		
No	Parking Policy Pricing	On-street Market Pricing	0.00	0.00		
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00	0.00		
No	Transit Improvements	Expand Transit Network	0.00	0.00		
No	Transit Improvements	Increase Transit Frequency	0.00		0.00	
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"	3.00			
No	Commute	Workplace Parking Charge		0.00		
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program	5.00			
	Commute	Commute Subtotal	0.00			

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

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
Yes	Only Natural Gas Hearth	
No	No Hearth	
Yes	Use Low VOC Cleaning Supplies	
Yes	Use Low VOC Paint (Residential Interior)	100.00
Yes	Use Low VOC Paint (Residential Exterior)	100.00
No	Use Low VOC Paint (Non-residential Interior)	250.00
No	Use Low VOC Paint (Non-residential Exterior)	250.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	15.00	
Yes	Install High Efficiency Lighting	15.00	
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

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

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	50.00

Valiano - Wastewater Treatment and Water Reclamation Facility (WTWRF)

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	21.60	1000sqft	0.50	21,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2018
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Concurrent with backbone infrastructure of Phase 1 (neighborhoods 1 and 5).

Land Use - The perimeter of the WTWRF is 120 ft by 180 ft = 21,600sf.

Construction Phase - Construction activities are to begin during backbone infrastructure of Phase 1 (Neighborhoods 1 and 5).

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

Demolition - Equestrian Facility

Architectural Coating - Most of the WTWRF footprint would not be structures requiring paint. Therefore, one-quarter of the CalEEMod defaults for sqft were used.

Vehicle Trips - ADT obtained from LLG (10 trips per day). 10 ADT / 21.6 1000sqft = 0.463 trips/1000sqft/day

Woodstoves -

Energy Use -

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

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Operational Off-Road Equipment - Two on-site generators would be required (one for the WTWRF and one for the fire pump station).

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	10,800.00	2,700.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	32,400.00	8,100.00
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00

tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	OxidationCatalyst	0.00	15.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblVehicleTrips	ST_TR	1.32	0.46
tblVehicleTrips	SU_TR	0.68	0.46
tblVehicleTrips	WD_TR	6.97	0.46

2.0 Emissions Summary

2.1 Overall Construction

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					
2016	0.1491	0.8273	0.5520	8.2000e-004	0.0176	0.0549	0.0724	3.7400e-003	0.0507	0.0544	0.0000	75.1190	75.1190	0.0186	0.0000	75.5092
Total	**0.1491**	**0.8273**	**0.5520**	**8.2000e-004**	**0.0176**	**0.0549**	**0.0724**	**3.7400e-003**	**0.0507**	**0.0544**	**0.0000**	**75.1190**	**75.1190**	**0.0186**	**0.0000**	**75.5092**

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					
2016	0.0759	0.0653	0.5197	8.2000e-004	0.0115	1.0400e-003	0.0126	2.6600e-003	1.0000e-003	3.6600e-003	0.0000	75.1189	75.1189	0.0186	0.0000	75.5091
Total	**0.0759**	**0.0653**	**0.5197**	**8.2000e-004**	**0.0115**	**1.0400e-003**	**0.0126**	**2.6600e-003**	**1.0000e-003**	**3.6600e-003**	**0.0000**	**75.1189**	**75.1189**	**0.0186**	**0.0000**	**75.5091**

	ROG	**NOx**	**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	**49.10**	**92.10**	**5.85**	**0.00**	**34.38**	**98.10**	**82.65**	**28.88**	**98.03**	**93.28**	**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	0.1094	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.9000e-004	3.9000e-004	0.0000	0.0000	4.1000e-004
Energy	1.3700e-003	0.0125	0.0105	7.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	77.1215	77.1215	2.8200e-003	7.8000e-004	77.4219
Mobile	6.0600e-003	0.0145	0.0646	1.6000e-004	0.0109	1.9000e-004	0.0111	2.9200e-003	1.8000e-004	3.1000e-003	0.0000	11.7555	11.7555	4.7000e-004	0.0000	11.7654
Offroad	0.1314	1.0695	0.9743	1.7100e-003		0.0681	0.0681		0.0681	0.0681	0.0000	146.9539	146.9539	0.0106	0.0000	147.1766
Waste						0.0000	0.0000		0.0000	0.0000	5.4361	0.0000	5.4361	0.3213	0.0000	12.1827
Water						0.0000	0.0000		0.0000	0.0000	1.5847	21.2556	22.8403	0.1636	4.0200e-003	27.5225
Total	**0.2482**	**1.0965**	**1.0495**	**1.9400e-003**	**0.0109**	**0.0693**	**0.0802**	**2.9200e-003**	**0.0693**	**0.0722**	**7.0208**	**257.0869**	**264.1077**	**0.4988**	**4.8000e-003**	**276.0695**

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	0.1094	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.9000e-004	3.9000e-004	0.0000	0.0000	4.1000e-004
Energy	1.2900e-003	0.0118	9.8800e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	71.3281	71.3281	2.6000e-003	7.2000e-004	71.6066
Mobile	6.0600e-003	0.0145	0.0646	1.6000e-004	0.0109	1.9000e-004	0.0111	2.9200e-003	1.8000e-004	3.1000e-003	0.0000	11.7555	11.7555	4.7000e-004	0.0000	11.7654
Offroad	0.1314	1.0695	0.9743	1.7100e-003		0.0681	0.0681		0.0681	0.0681	0.0000	146.9539	146.9539	0.0106	0.0000	147.1766
Waste						0.0000	0.0000		0.0000	0.0000	2.7181	0.0000	2.7181	0.1606	0.0000	6.0913
Water						0.0000	0.0000		0.0000	0.0000	1.2678	17.0045	18.2722	0.1309	3.2100e-003	22.0160
Total	**0.2482**	**1.0957**	**1.0489**	**1.9400e-003**	**0.0109**	**0.0692**	**0.0801**	**2.9200e-003**	**0.0692**	**0.0721**	**3.9858**	**247.0424**	**251.0282**	**0.3052**	**3.9300e-003**	**258.6563**

	ROG	NOx	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	**52.96**	**97.61**	**92.89**	**88.14**	**0.00**	**98.44**	**85.04**	**0.00**	**98.45**	**94.47**	**43.23**	**61.07**	**60.59**	**40.94**	**18.13**	**59.62**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/6/2016	7/19/2016	5	10	
2	Site Preparation	Site Preparation	7/20/2016	7/20/2016	5	1	
3	Grading	Grading	7/21/2016	7/22/2016	5	2	
4	Building Construction	Building Construction	7/23/2016	12/9/2016	5	100	
5	Paving	Paving	12/10/2016	12/16/2016	5	5	
6	Architectural Coating	Architectural Coating	12/17/2016	12/23/2016	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 8,100; Non-Residential Outdoor: 2,700 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	91.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	9.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

Water Exposed Area

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.9700e-003	0.0000	9.9700e-003	1.5100e-003	0.0000	1.5100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.5600e-003	0.0562	0.0435	6.0000e-005		4.0200e-003	4.0200e-003		3.8400e-003	3.8400e-003	0.0000	5.4141	5.4141	1.0800e-003	0.0000	5.4369
Total	**6.5600e-003**	**0.0562**	**0.0435**	**6.0000e-005**	**9.9700e-003**	**4.0200e-003**	**0.0140**	**1.5100e-003**	**3.8400e-003**	**5.3500e-003**	**0.0000**	**5.4141**	**5.4141**	**1.0800e-003**	**0.0000**	**5.4369**

3.2 Demolition - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.5000e-004	0.0132	0.0109	3.0000e-005	7.8000e-004	1.7000e-004	9.5000e-004	2.1000e-004	1.6000e-004	3.7000e-004	0.0000	3.1079	3.1079	2.0000e-005	0.0000	3.1084
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	2.3000e-004	2.1600e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3737	0.3737	2.0000e-005	0.0000	0.3741
Total	**1.1200e-003**	**0.0134**	**0.0131**	**3.0000e-005**	**1.1800e-003**	**1.7000e-004**	**1.3500e-003**	**3.2000e-004**	**1.6000e-004**	**4.8000e-004**	**0.0000**	**3.4815**	**3.4815**	**4.0000e-005**	**0.0000**	**3.4824**

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					4.4800e-003	0.0000	4.4800e-003	6.8000e-004	0.0000	6.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7000e-004	2.4500e-003	0.0393	6.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	5.4141	5.4141	1.0800e-003	0.0000	5.4369
Total	**6.7000e-004**	**2.4500e-003**	**0.0393**	**6.0000e-005**	**4.4800e-003**	**4.0000e-005**	**4.5200e-003**	**6.8000e-004**	**4.0000e-005**	**7.2000e-004**	**0.0000**	**5.4141**	**5.4141**	**1.0800e-003**	**0.0000**	**5.4369**

3.2 Demolition - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.5000e-004	0.0132	0.0109	3.0000e-005	7.8000e-004	1.7000e-004	9.5000e-004	2.1000e-004	1.6000e-004	3.7000e-004	0.0000	3.1079	3.1079	2.0000e-005	0.0000	3.1084
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	2.3000e-004	2.1600e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3737	0.3737	2.0000e-005	0.0000	0.3741
Total	**1.1200e-003**	**0.0134**	**0.0131**	**3.0000e-005**	**1.1800e-003**	**1.7000e-004**	**1.3500e-003**	**3.2000e-004**	**1.6000e-004**	**4.8000e-004**	**0.0000**	**3.4815**	**3.4815**	**4.0000e-005**	**0.0000**	**3.4824**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.8000e-004	6.8200e-003	3.6700e-003	0.0000		4.2000e-004	4.2000e-004		3.8000e-004	3.8000e-004	0.0000	0.4414	0.4414	1.3000e-004	0.0000	0.4442
Total	**6.8000e-004**	**6.8200e-003**	**3.6700e-003**	**0.0000**	**2.7000e-004**	**4.2000e-004**	**6.9000e-004**	**3.0000e-005**	**3.8000e-004**	**4.1000e-004**	**0.0000**	**0.4414**	**0.4414**	**1.3000e-004**	**0.0000**	**0.4442**

3.3 Site Preparation - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.1000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0187	0.0187	0.0000	0.0000	0.0187
Total	**1.0000e-005**	**1.0000e-005**	**1.1000e-004**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0187**	**0.0187**	**0.0000**	**0.0000**	**0.0187**

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					1.2000e-004	0.0000	1.2000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0000e-005	2.1000e-004	3.5000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.4414	0.4414	1.3000e-004	0.0000	0.4442
Total	**6.0000e-005**	**2.1000e-004**	**3.5000e-003**	**0.0000**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.4414**	**0.4414**	**1.3000e-004**	**0.0000**	**0.4442**

3.3 Site Preparation - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.1000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0187	0.0187	0.0000	0.0000	0.0187
Total	**1.0000e-005**	**1.0000e-005**	**1.1000e-004**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0187**	**0.0187**	**0.0000**	**0.0000**	**0.0187**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3100e-003	0.0112	8.7000e-003	1.0000e-005		8.0000e-004	8.0000e-004		7.7000e-004	7.7000e-004	0.0000	1.0828	1.0828	2.2000e-004	0.0000	1.0874
Total	**1.3100e-003**	**0.0112**	**8.7000e-003**	**1.0000e-005**	**7.5000e-004**	**8.0000e-004**	**1.5500e-003**	**4.1000e-004**	**7.7000e-004**	**1.1800e-003**	**0.0000**	**1.0828**	**1.0828**	**2.2000e-004**	**0.0000**	**1.0874**

3.4 Grading - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	5.0000e-005	4.3000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0747	0.0747	0.0000	0.0000	0.0748
Total	**3.0000e-005**	**5.0000e-005**	**4.3000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0747**	**0.0747**	**0.0000**	**0.0000**	**0.0748**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.4000e-004	0.0000	3.4000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3000e-004	4.9000e-004	7.8700e-003	1.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	1.0828	1.0828	2.2000e-004	0.0000	1.0874
Total	**1.3000e-004**	**4.9000e-004**	**7.8700e-003**	**1.0000e-005**	**3.4000e-004**	**1.0000e-005**	**3.5000e-004**	**1.9000e-004**	**1.0000e-005**	**2.0000e-004**	**0.0000**	**1.0828**	**1.0828**	**2.2000e-004**	**0.0000**	**1.0874**

3.4 Grading - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	5.0000e-005	4.3000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0747	0.0747	0.0000	0.0000	0.0748
Total	**3.0000e-005**	**5.0000e-005**	**4.3000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0747**	**0.0747**	**0.0000**	**0.0000**	**0.0748**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0691	0.6853	0.4106	5.7000e-004		0.0470	0.0470		0.0432	0.0432	0.0000	53.4584	53.4584	0.0161	0.0000	53.7970
Total	**0.0691**	**0.6853**	**0.4106**	**5.7000e-004**		**0.0470**	**0.0470**		**0.0432**	**0.0432**	**0.0000**	**53.4584**	**53.4584**	**0.0161**	**0.0000**	**53.7970**

3.5 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2800e-003	0.0195	0.0274	5.0000e-005	1.3000e-003	2.9000e-004	1.5900e-003	3.7000e-004	2.6000e-004	6.4000e-004	0.0000	4.3149	4.3149	3.0000e-005	0.0000	4.3157
Worker	1.5400e-003	2.0400e-003	0.0194	4.0000e-005	3.6100e-003	3.0000e-005	3.6400e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	3.3629	3.3629	1.8000e-004	0.0000	3.3666
Total	**3.8200e-003**	**0.0216**	**0.0468**	**9.0000e-005**	**4.9100e-003**	**3.2000e-004**	**5.2300e-003**	**1.3300e-003**	**2.9000e-004**	**1.6200e-003**	**0.0000**	**7.6778**	**7.6778**	**2.1000e-004**	**0.0000**	**7.6823**

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	6.9400e-003	0.0256	0.3849	5.7000e-004		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	53.4583	53.4583	0.0161	0.0000	53.7969
Total	**6.9400e-003**	**0.0256**	**0.3849**	**5.7000e-004**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**53.4583**	**53.4583**	**0.0161**	**0.0000**	**53.7969**

3.5 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2800e-003	0.0195	0.0274	5.0000e-005	1.3000e-003	2.9000e-004	1.5900e-003	3.7000e-004	2.6000e-004	6.4000e-004	0.0000	4.3149	4.3149	3.0000e-005	0.0000	4.3157
Worker	1.5400e-003	2.0400e-003	0.0194	4.0000e-005	3.6100e-003	3.0000e-005	3.6400e-003	9.6000e-004	3.0000e-005	9.8000e-004	0.0000	3.3629	3.3629	1.8000e-004	0.0000	3.3666
Total	**3.8200e-003**	**0.0216**	**0.0468**	**9.0000e-005**	**4.9100e-003**	**3.2000e-004**	**5.2300e-003**	**1.3300e-003**	**2.9000e-004**	**1.6200e-003**	**0.0000**	**7.6778**	**7.6778**	**2.1000e-004**	**0.0000**	**7.6823**

3.6 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.8000e-003	0.0266	0.0182	3.0000e-005		1.6500e-003	1.6500e-003		1.5300e-003	1.5300e-003	0.0000	2.4575	2.4575	6.7000e-004	0.0000	2.4717
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.8000e-003**	**0.0266**	**0.0182**	**3.0000e-005**		**1.6500e-003**	**1.6500e-003**		**1.5300e-003**	**1.5300e-003**	**0.0000**	**2.4575**	**2.4575**	**6.7000e-004**	**0.0000**	**2.4717**

3.6 Paving - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	2.0000e-004	1.9400e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3363	0.3363	2.0000e-005	0.0000	0.3367
Total	**1.5000e-004**	**2.0000e-004**	**1.9400e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3363**	**0.3363**	**2.0000e-005**	**0.0000**	**0.3367**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.7000e-004	1.0100e-003	0.0170	3.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	2.4575	2.4575	6.7000e-004	0.0000	2.4717
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.7000e-004**	**1.0100e-003**	**0.0170**	**3.0000e-005**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.4575**	**2.4575**	**6.7000e-004**	**0.0000**	**2.4717**

3.6 Paving - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	2.0000e-004	1.9400e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3363	0.3363	2.0000e-005	0.0000	0.3367
Total	**1.5000e-004**	**2.0000e-004**	**1.9400e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3363**	**0.3363**	**2.0000e-005**	**0.0000**	**0.3367**

3.7 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0626					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.2000e-004	5.9300e-003	4.7100e-003	1.0000e-005		4.9000e-004	4.9000e-004		4.9000e-004	4.9000e-004	0.0000	0.6383	0.6383	8.0000e-005	0.0000	0.6399
Total	**0.0635**	**5.9300e-003**	**4.7100e-003**	**1.0000e-005**		**4.9000e-004**	**4.9000e-004**		**4.9000e-004**	**4.9000e-004**	**0.0000**	**0.6383**	**0.6383**	**8.0000e-005**	**0.0000**	**0.6399**

3.7 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	2.2000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0374	0.0374	0.0000	0.0000	0.0374
Total	**2.0000e-005**	**2.0000e-005**	**2.2000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0374**	**0.0374**	**0.0000**	**0.0000**	**0.0374**

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	0.0626					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0000e-005	2.7000e-004	4.5800e-003	1.0000e-005		0.0000	0.0000		0.0000	0.0000	0.0000	0.6383	0.6383	8.0000e-005	0.0000	0.6399
Total	**0.0626**	**2.7000e-004**	**4.5800e-003**	**1.0000e-005**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.6383**	**0.6383**	**8.0000e-005**	**0.0000**	**0.6399**

3.7 Architectural Coating - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	2.2000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0374	0.0374	0.0000	0.0000	0.0374
Total	**2.0000e-005**	**2.0000e-005**	**2.2000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0374**	**0.0374**	**0.0000**	**0.0000**	**0.0374**

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	6.0600e-003	0.0145	0.0646	1.6000e-004	0.0109	1.9000e-004	0.0111	2.9200e-003	1.8000e-004	3.1000e-003	0.0000	11.7555	11.7555	4.7000e-004	0.0000	11.7654
Unmitigated	6.0600e-003	0.0145	0.0646	1.6000e-004	0.0109	1.9000e-004	0.0111	2.9200e-003	1.8000e-004	3.1000e-003	0.0000	11.7555	11.7555	4.7000e-004	0.0000	11.7654

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	9.94	9.94	9.94	29,008	29,008
Total	9.94	9.94	9.94	29,008	29,008

4.3 Trip Type Information

	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
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	58.5232	58.5232	2.3600e-003	4.9000e-004	58.7238
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	63.5316	63.5316	2.5600e-003	5.3000e-004	63.7493
NaturalGas Mitigated	1.2900e-003	0.0118	9.8800e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	12.8049	12.8049	2.5000e-004	2.3000e-004	12.8828
NaturalGas Unmitigated	1.3700e-003	0.0125	0.0105	7.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	13.5898	13.5898	2.6000e-004	2.5000e-004	13.6726

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					
General Light Industry	254664	1.3700e-003	0.0125	0.0105	7.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	13.5898	13.5898	2.6000e-004	2.5000e-004	13.6726
Total		**1.3700e-003**	**0.0125**	**0.0105**	**7.0000e-005**		**9.5000e-004**	**9.5000e-004**		**9.5000e-004**	**9.5000e-004**	**0.0000**	**13.5898**	**13.5898**	**2.6000e-004**	**2.5000e-004**	**13.6726**

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					
General Light Industry	239954	1.2900e-003	0.0118	9.8800e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	12.8049	12.8049	2.5000e-004	2.3000e-004	12.8828
Total		**1.2900e-003**	**0.0118**	**9.8800e-003**	**7.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.9000e-004**	**8.9000e-004**	**0.0000**	**12.8049**	**12.8049**	**2.5000e-004**	**2.3000e-004**	**12.8828**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	194400	63.5316	2.5600e-003	5.3000e-004	63.7493
Total		**63.5316**	**2.5600e-003**	**5.3000e-004**	**63.7493**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	179075	58.5232	2.3600e-003	4.9000e-004	58.7238
Total		**58.5232**	**2.3600e-003**	**4.9000e-004**	**58.7238**

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	0.1094	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.9000e-004	3.9000e-004	0.0000	0.0000	4.1000e-004
Unmitigated	0.1094	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.9000e-004	3.9000e-004	0.0000	0.0000	4.1000e-004

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	0.0250					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0844					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.9000e-004	3.9000e-004	0.0000	0.0000	4.1000e-004
Total	**0.1094**	**0.0000**	**2.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.9000e-004**	**3.9000e-004**	**0.0000**	**0.0000**	**4.1000e-004**

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	0.0250					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0844					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.9000e-004	3.9000e-004	0.0000	0.0000	4.1000e-004
Total	**0.1094**	**0.0000**	**2.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.9000e-004**	**3.9000e-004**	**0.0000**	**0.0000**	**4.1000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	18.2722	0.1309	3.2100e-003	22.0160
Unmitigated	22.8403	0.1636	4.0200e-003	27.5225

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	4.995 / 0	22.8403	0.1636	4.0200e-003	27.5225
Total		**22.8403**	**0.1636**	**4.0200e-003**	**27.5225**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	3.996 / 0	18.2722	0.1309	3.2100e-003	22.0160
Total		**18.2722**	**0.1309**	**3.2100e-003**	**22.0160**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.7181	0.1606	0.0000	6.0913
Unmitigated	5.4361	0.3213	0.0000	12.1827

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	26.78	5.4361	0.3213	0.0000	12.1827
Total		**5.4361**	**0.3213**	**0.0000**	**12.1827**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	13.39	2.7181	0.1606	0.0000	6.0913
Total		**2.7181**	**0.1606**	**0.0000**	**6.0913**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Generator Sets	2	8.00	260	84	0.74	Diesel

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Generator Sets	0.1314	1.0695	0.9743	1.7100e-003		0.0681	0.0681		0.0681	0.0681	0.0000	146.9539	146.9539	0.0106	0.0000	147.1766
Total	**0.1314**	**1.0695**	**0.9743**	**1.7100e-003**		**0.0681**	**0.0681**		**0.0681**	**0.0681**	**0.0000**	**146.9539**	**146.9539**	**0.0106**	**0.0000**	**147.1766**

10.0 Vegetation

Valiano - Wastewater Treatment and Water Reclamation Facility (WTWRF)

San Diego County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.01	0.95	0.03	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.85	0.93	0.06	0.00	0.98	0.98	0.00	0.00	0.00	0.00	0.00	0.00
Demolition	0.77	0.77	0.07	0.00	0.95	0.95	0.00	0.00	0.00	0.00	0.00	0.00
Grading	0.88	0.95	0.09	0.00	0.99	0.99	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.86	0.95	0.06	0.00	0.99	0.99	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.90	0.97	0.04	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	Tier 4 Final	1	1	Level 2	15.00
Cement and Mortar Mixers	Diesel	Tier 4 Final	4	4	Level 2	15.00
Concrete/Industrial Saws	Diesel	Tier 4 Final	2	2	Level 2	15.00
Cranes	Diesel	Tier 4 Final	1	1	Level 2	15.00
Forklifts	Diesel	Tier 4 Final	2	2	Level 2	15.00
Graders	Diesel	Tier 4 Final	1	1	Level 2	15.00
Pavers	Diesel	Tier 4 Final	1	1	Level 2	15.00
Rollers	Diesel	Tier 4 Final	1	1	Level 2	15.00
Rubber Tired Dozers	Diesel	Tier 4 Final	2	2	Level 2	15.00
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	8	8	Level 2	15.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	9.20000E-004	5.93000E-003	4.71000E-003	1.00000E-005	4.90000E-004	4.90000E-004	0.00000E+000	6.38310E-001	6.38310E-001	8.00000E-005	0.00000E+000	6.39890E-001
Cement and Mortar Mixers	4.40000E-004	2.77000E-003	2.31000E-003	1.00000E-005	1.10000E-004	1.10000E-004	0.00000E+000	3.43710E-001	3.43710E-001	4.00000E-005	0.00000E+000	3.44460E-001
Concrete/Industrial Saws	3.88000E-003	2.77300E-002	2.26500E-002	4.00000E-005	2.08000E-003	2.08000E-003	0.00000E+000	3.22594E+000	3.22594E+000	3.10000E-004	0.00000E+000	3.23250E+000
Cranes	1.80000E-002	2.13290E-001	7.46200E-002	1.40000E-004	9.68000E-003	8.90000E-003	0.00000E+000	1.32956E+001	1.32956E+001	4.01000E-003	0.00000E+000	1.33798E+001
Forklifts	1.70200E-002	1.46500E-001	9.47300E-002	1.10000E-004	1.22500E-002	1.12700E-002	0.00000E+000	1.07993E+001	1.07993E+001	3.26000E-003	0.00000E+000	1.08677E+001
Graders	5.10000E-004	5.19000E-003	2.46000E-003	0.00000E+000	2.90000E-004	2.70000E-004	0.00000E+000	2.94570E-001	2.94570E-001	9.00000E-005	0.00000E+000	2.96430E-001
Pavers	8.80000E-004	9.87000E-003	6.24000E-003	1.00000E-005	4.90000E-004	4.50000E-004	0.00000E+000	9.30770E-001	9.30770E-001	2.80000E-004	0.00000E+000	9.36660E-001
Rollers	7.40000E-004	6.81000E-003	4.40000E-003	1.00000E-005	5.00000E-004	4.60000E-004	0.00000E+000	5.40720E-001	5.40720E-001	1.60000E-004	0.00000E+000	5.44150E-001
Rubber Tired Dozers	9.30000E-004	1.04000E-002	7.86000E-003	1.00000E-005	4.80000E-004	4.50000E-004	0.00000E+000	6.28290E-001	6.28290E-001	1.90000E-004	0.00000E+000	6.32270E-001
Tractors/Loaders/Backhoes	3.80400E-002	3.63550E-001	2.69460E-001	3.50000E-004	2.79900E-002	2.57500E-002	0.00000E+000	3.27954E+001	3.27954E+001	9.89000E-003	0.00000E+000	3.30031E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	7.00000E-005	2.70000E-004	4.58000E-003	1.00000E-005	0.00000E+000	0.00000E+000	0.00000E+000	6.38310E-001	6.38310E-001	8.00000E-005	0.00000E+000	6.39890E-001
Cement and Mortar Mixers	0.00000E+000	0.00000E+000	0.00000E+000	1.00000E-005	0.00000E+000	0.00000E+000	0.00000E+000	3.43710E-001	3.43710E-001	4.00000E-005	0.00000E+000	3.44460E-001
Concrete/Industrial Saws	3.80000E-004	1.38000E-003	2.31500E-002	4.00000E-005	3.00000E-005	3.00000E-005	0.00000E+000	3.22594E+000	3.22594E+000	3.10000E-004	0.00000E+000	3.23250E+000
Cranes	1.73000E-003	6.39000E-003	6.35800E-002	1.40000E-004	1.20000E-004	1.20000E-004	0.00000E+000	1.32956E+001	1.32956E+001	4.01000E-003	0.00000E+000	1.33798E+001
Forklifts	1.41000E-003	5.20000E-003	8.71200E-002	1.10000E-004	9.00000E-005	9.00000E-005	0.00000E+000	1.07993E+001	1.07993E+001	3.26000E-003	0.00000E+000	1.08677E+001
Graders	4.00000E-005	1.40000E-004	2.33000E-003	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.94570E-001	2.94570E-001	9.00000E-005	0.00000E+000	2.96430E-001
Pavers	1.20000E-004	4.50000E-004	7.49000E-003	1.00000E-005	1.00000E-005	1.00000E-005	0.00000E+000	9.30770E-001	9.30770E-001	2.80000E-004	0.00000E+000	9.36660E-001
Rollers	7.00000E-005	2.60000E-004	4.34000E-003	1.00000E-005	0.00000E+000	0.00000E+000	0.00000E+000	5.40720E-001	5.40720E-001	1.60000E-004	0.00000E+000	5.44150E-001
Rubber Tired Dozers	8.00000E-005	3.00000E-004	2.97000E-003	1.00000E-005	1.00000E-005	1.00000E-005	0.00000E+000	6.28290E-001	6.28290E-001	1.90000E-004	0.00000E+000	6.32270E-001
Tractors/Loaders/Backhoes	4.24000E-003	1.56200E-002	2.61580E-001	3.50000E-004	2.80000E-004	2.80000E-004	0.00000E+000	3.27953E+001	3.27953E+001	9.89000E-003	0.00000E+000	3.30031E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	9.23913E-001	9.54469E-001	2.76008E-002	0.00000E+000	1.00000E+000	1.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Cement and Mortar Mixers	1.00000E+000	1.00000E+000	1.00000E+000	0.00000E+000	1.00000E+000	1.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Concrete/Industrial Saws	9.02062E-001	9.50234E-001	-2.20751E-002	0.00000E+000	9.85577E-001	9.85577E-001	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Cranes	9.03889E-001	9.70041E-001	1.47950E-001	0.00000E+000	9.87603E-001	9.86517E-001	0.00000E+000	1.50426E-006	1.50426E-006	0.00000E+000	0.00000E+000	1.49479E-006
Forklifts	9.17156E-001	9.64505E-001	8.03336E-002	0.00000E+000	9.92653E-001	9.92014E-001	0.00000E+000	9.25989E-007	9.25989E-007	0.00000E+000	0.00000E+000	1.84032E-006
Graders	9.21569E-001	9.73025E-001	5.28455E-002	0.00000E+000	1.00000E+000	1.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Pavers	8.63636E-001	9.54407E-001	-2.00321E-001	0.00000E+000	9.79592E-001	9.77778E-001	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Rollers	9.05405E-001	9.61821E-001	1.36364E-002	0.00000E+000	1.00000E+000	1.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Rubber Tired Dozers	9.13978E-001	9.71154E-001	6.22137E-001	0.00000E+000	9.79167E-001	9.77778E-001	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Tractors/Loaders/Backhoes	8.88538E-001	9.57035E-001	2.92437E-002	0.00000E+000	9.89996E-001	9.89126E-001	0.00000E+000	1.21968E-006	1.21968E-006	0.00000E+000	0.00000E+000	1.21201E-006

Fugitive Dust Mitigation

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

		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
Demolition	Fugitive Dust	0.01	0.00	0.00	0.00	0.55	0.55
Demolition	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Grading	Fugitive Dust	0.00	0.00	0.00	0.00	0.55	0.54
Grading	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.00	0.00	0.00	0.00	0.56	0.67
Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.88	7.88	7.81	7.55	7.88
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	5.84	5.77	5.82	0.00	6.32	6.32	0.00	5.78	5.78	3.85	8.00	5.78
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	20.00	20.00	20.00	20.02	20.15	20.01
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

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

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

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

Area Mitigation

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

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	15.00	
Yes	Install High Efficiency Lighting	15.00	
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

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

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	50.00

Appendix E

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 16 percent reduction requirement.

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 $MMTCO_2e$ and projected 2020 unmitigated transportation-related emissions is 168.2 $MMTCO_2e$, therefore the reduction is 2.38 percent (4 $MMTCO_2e$/168.2 $MMTCO_2e$). This percentage reduction can be applied to the Project's transportation emissions.

Table E-1
SCOPING PLAN GHG EMISSION REDUCTIONS
(ANNUAL $MMTCO_2e$)

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	Low Carbon Fuel Standard	16.0	9.51
		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 reductions associated with Pavley I are not allowable reduction credits for the Project, consistent with the revised CARB projection that determined the 16 percent reduction goal. CalEEMod defaults already account for Pavley I; therefore, neither the unmitigated or mitigated model scenarios were adjusted with respect to Pavley I. However, County of San Diego allows the Project to apply GHG reduction credits for LCFS and Pavley II towards the 16% reduction target. Therefore, adjustments were made to the CalEEMod model outputs to account for the allowable reductions.

CalEEMod defaults also take into account reduced emissions from LCFS; therefore the unmitigated emissions were corrected to reverse the 9.51 percent mobile emissions reduction to allow reduction credit for LCFS in the mitigated scenario.

Table E-2 UNCORRECTED AND CORRECTED CALEEMOD OUTPUTS FOR UNMITIGATED AND MITIGATED PROJECT EMISSIONS - MOBILE (ANNUAL MT CO_2e)				
Source	**Unmitigated Emissions (uncorrected)**	**Unmitigated Emissions (corrected)[1]**	**Mitigated Emissions (uncorrected)[2]**	**Mitigated Emissions (corrected)[3]**
Mobile Emissions	4,103	4,534	4,103	3,995

Notes:
All model results include built in emission reductions for Pavley I regulations (model default).
[1] Reverses the 9.51 percent mobile emission reduction to adjust model default to allow reduction credit for LCFS in mitigated (project with design features) scenario.
[2] Includes LCFS reduction (model default)
[3] 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; therefore, the unmitigated scenario did not require a correction. Emissions for the mitigated Project were corrected to include the reduction from this measure. The mitigated Project would also include a 30 percent reduction in electricity use from the inclusion of solar panels. This reduction was included in the mitigated emissions. Additionally, the mitigated Project would include solar water heaters in 19 percent of the proposed residential units. This reduction, however, was not quantified.

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 UNMITIGATED AND MITIGATED EMISSIONS – ENERGY (ANNUAL MTCO_2e)			
Energy Sources	**Unmitigated**	**Mitigated (uncorrected)[1]**	**Mitigated (corrected)[2]**
Electricity	844	806	456
Natural Gas	510	450	450
Total Energy Sources[3]	1,354	1,256	906

Notes:
[1] Includes project design features discussed in Section 5.2.3.3.
[2] Includes electricity reduction of 11.4 percent for RES and 30 percent for solar panels.
[3] Totals may not add up exactly due to rounding.

Methodology for Calculating Unmitigated (Project without Design Features) and Mitigated (Project with Design Features) 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
UNCORRECTED AND CORRECTED CALEEMOD OUTPUTS FOR UNMITIGATED AND MITIGATED EMISSIONS – ENERGY (ANNUAL $MTCO_2e$)

Source	Percent Reduction from Unmitigated	BAU CO_2e	CO_2e Reduced
Water	65%	85	55

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

HORIZON YEAR 2030 & 2050 EMFAC ANALYSIS

Horizon Year 2030 2050 EMFAC2014 Output

County	Veh_Tech	New Total VMT	2030 CO2	2030 CH4	2050 CO2	2050 CH4
San Diego	LDA - GAS	5,536,465	1,223	0.03	1,068	0.03
San Diego	LDT1 - GAS	793,301	234	0.01	194	0.00
San Diego	LDT2 - GAS	2,061,123	599	0.01	472	0.00
San Diego	LHD1 - DSL	19,466	12	0.00	11	0.00
San Diego	LHD1 - GAS	369,845	343	0.01	331	0.00
San Diego	LHD2 - DSL	2,772	2	0.00	2	0.00
San Diego	LHD2 - GAS	52,668	54	0.00	53	0.00
San Diego	MCY - GAS	70,799	15	0.04	16	0.04
San Diego	MDV - DSL	70,557	28	0.00	24	0.00
San Diego	MDV - GAS	1,340,579	502	0.01	345	0.01
San Diego	MH - DSL	1,858	2	0.00	2	0.00
San Diego	MH - GAS	35,310	49	0.00	47	0.00
San Diego	OBUS - GAS	20,181	28	0.00	28	0.00
San Diego	SBUS - GAS	6,321	5	0.00	5	0.00
San Diego	T6 PUBLIC - DSL	135,365	182	0.00	178	0.00
San Diego	T7 TRACTOR - DSL	247,172	406	0.00	399	0.00
San Diego	UBUS - GAS	22,241	40	0.00	40	0.00
			3,723	0.12	3,214	0.09