Appendix C

Air Quality and Greenhouse Gas Emissions Analysis Technical Report

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Air Quality and Greenhouse Gas Emissions Analysis Technical Report for the Marisol Project City of Del Mar, California

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
2030 Scoping Plan	*2017 Climate Change Scoping Plan Update*
2050 RTP/SCS	*2050 Regional Transportation Plan/Sustainable Communities Strategy*
°C	degrees Celsius
°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter
AB	Assembly Bill
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CALGreen	California's Green Building Standards
CALINE4	California LINE Source Dispersion Model
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH_4	methane
City	City of Del Mar
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	San Diego County
CPUC	California Public Utilities Commission
DPM	diesel particulate matter
EO	Executive Order
EPA	U.S. Environmental Protection Agency
First Update	*First Update to the Climate Change Scoping Plan: Building on the Framework*
GHG	greenhouse gas
GWP	global warming potential
HAPs	hazardous air pollutants
HFC	hydrofluorocarbon
IPCC	Intergovernmental Panel on Climate Change
LOS	level of service
MMT	million metric ton
MPO	metropolitan planning organization
MT	metric tons
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NHTSA	National Highway Traffic Safety Administration

Acronym/Abbreviation	Definition
NO_2	nitrogen dioxide
NO_x	oxides of nitrogen
O_3	ozone
PDFs	Project Design Features
PFC	perfluorocarbon
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to 10 microns
$PM_{2.5}$	particulate matter with an aerodynamic diameter less than or equal to 2.5 microns
Ppb	parts per billion
Ppm	parts per million
Project	Del Mar Beach Resort Project
RAQS	Regional Air Quality Strategy
Regional Plan	*San Diego Forward: The Regional Plan*
RTP	Regional Transportation Plan
SANDAG	San Diego Association of Governments
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
Scoping Plan	*Climate Change Scoping Plan: A Framework for Change*
SCS	Sustainable Communities Strategy
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SDG&E	San Diego Gas & Electric
SF_6	sulfur hexafluoride
SIP	state implementation plan
SO_2	sulfur dioxide
SO_x	sulfur oxides
TAC	toxic air contaminants
Under 2 MOU	Global Climate Leadership Memorandum of Understanding
VMT	vehicle miles traveled
VOC	volatile organic compound
ZNE	zero net energy

EXECUTIVE SUMMARY

The purpose of this technical report is to assess the potential air quality and greenhouse gas (GHG) emissions impacts associated with implementation of the proposed Marisol (project) located within the City of Del Mar (City). This assessment utilizes the significance thresholds in Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.).

Project Overview

The Plan Area includes approximately 17.45 acres of land, located at Border Avenue and west of Camino Del Mar, as well as a portion east of Camino Del Mar, in the northwestern corner of the City of Del Mar. The Plan Area is comprised of 16.55 acres of privately owned land, 0.78-acre of public right-of-way along Camino Del Mar, and a 0.12-acre City coastal viewing access parcel located at the northern extent of the Plan Area. The Specific Plan Area would be accessible from the intersection of South Sierra Avenue and Border Avenue on the northern side of the Plan Area

The project consists of a Specific Plan including five land use sub-designations: Visitor Serving Accommodations (VSA), Parkland/Passive Open Space (PPOS), Coastal Bluff Protection Area (CBPA) and Steep Slope Protection Area (SSPA). The VSA land use sub-designation allows for the development of approximately 65 hotel guest rooms, 31 villas (some of which may be used as hotel guest rooms when not in use by owners, subject to provisions in the Specific Plan), 10 lower-cost shared visitor-serving accommodations, 22 affordable housing units, and associated amenities. Amenities include, but are not limited to, restaurants, bar/lounge, special event space, meeting space, swimming pools, a spa and fitness center and retail.

The PPOS land use sub-designation allows for public amenities such as trails, vista points, picnic areas, public access stairway and public restrooms, and passive recreational uses. Passive recreational uses are defined in the Specific plan as low intensity recreational activities that require little or no infrastructure and that are geared toward the viewing and appreciation of scenic and environmentally sensitive areas.

The CBPA and SSPA land use sub-designations serve as protection areas. The only disturbance allowed within the CBPA is the minimal amount necessary to install drainage control measures to protect a coastal bluff area from degradation and/or erosion. Shoreline protection devices are prohibited in this area. The only disturbance allowed within the SSPA is the minimal amount necessary to provide a public access stairway, public restrooms, and related facilities for hotel and public visitor services at the toe of slope; to implement drainage control measures to protect the steep slope area from degradation and/or erosion; and to allow interpretive signage and pathway lighting.

The project site is located within the San Diego Air Basin (SDAB) and is within the jurisdiction of the San Diego Air Pollution Control District (SDAPCD). Construction and operational criteria air pollutant and GHG emissions were estimated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2, consistent with SDAPCD guidance.

Air Quality

The air quality impact analysis evaluated the potential for adverse impacts to air quality due to construction and operational emissions resulting from the project. Impacts were evaluated for their significance based on the SDAPCD mass daily criteria air pollutant thresholds of significance (SDAPCD 2007). Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. Criteria air pollutants include ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM_{10}), particulate matter with an aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$), and lead. Pollutants that are evaluated include volatile organic compounds (VOCs), oxides of nitrogen (NO_x), CO, sulfur oxides (SO_x), PM_{10}, and $PM_{2.5}$. VOCs and NO_x are important because they are precursors to O_3.

Air Quality Plan Consistency

Regarding consistency with local air quality plans, the project would result in a more intensive land use than currently allowed under the City's 1985 Community Plan (City of Del Mar 1985), which SDAPCD's Regional Air Quality Strategy (RAQS) emissions forecast is based on. The project was deemed to be consistent with 2016 RAQS, which is the current air quality plan, because the most recent forecasts of the San Diego Association of Governments (SANDAG) anticipate growth for the project area of 199 new residents over a period of 8 years (2012 to 2020). The addition of approximately 199 new residents to Subregional Area 13 as a result of the project would be accommodated in the population forecast used to prepare the 2016 RAQS.

Construction Criteria Air Pollutant Emissions

Construction of the project would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and VOC off-gassing) and off-site sources (i.e., on-road haul trucks, vendor trucks, and worker vehicle trips). Estimated maximum daily construction emissions would not exceed the SDAPCD significance thresholds for VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$ during construction in all construction years (2020–2022). Therefore, project construction impacts would be less than significant.

Operational Criteria Air Pollutant Emissions

Operational year 2023 was assumed, consistent with the construction schedule. Operation of the project would generate operational criteria air pollutants from mobile sources (i.e., vehicle trips), area sources (i.e., consumer product use, architectural coatings, and landscape maintenance equipment), and energy (i.e., natural gas). Estimated maximum daily operational emissions would not exceed the SDAPCD operational significance thresholds for VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$. Therefore, project operational impacts would be less than significant.

Exposure of Sensitive Receptors

Carbon Monoxide Hotspots

Operation of the project would not expose sensitive receptors to localized high concentrations of CO or contribute traffic volumes to intersections that would cause a CO hotspot. As neither the 1-hour nor the 8-hour CO California Ambient Air Quality Standards (CAAQS) would be equaled or exceeded at any of the studied intersections, potential operational CO hotspot impacts would be less than significant.

Toxic Air Contaminants

Construction activities would not generate emissions in excess of the SDAPCD mass daily thresholds; therefore, project-generated construction emissions are not anticipated to be substantial. Diesel equipment used during project construction would be subject to the California Air Resources Board (CARB) air toxic control measures for in-use off-road diesel fleets, which would minimize diesel particulate matter (DPM) emissions.

No long-term sources of toxic air contaminant (TAC) emissions are anticipated during operation of the project because the project would only include residential units, recreational land uses, and commercial land uses; the project would not include heavy industrial uses or other land uses typically associated with stationary sources and TACs. Additionally, the project would not be located next to a major source of TACs or high-volume roadway. As such, the project would not result in substantial TAC emissions that may affect nearby receptors, nor would the project be exposed to nearby sources of TACs. Impact would be less than significant.

Odors

Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment, architectural coatings, and asphalt pavement application, which would disperse rapidly from the project site and generally occur at magnitudes that would not affect substantial numbers of people. Impacts associated with odors during construction

would be less than significant. The project is a hotel/resort development that would not include land uses with sources that have the potential to generate substantial odors, and impacts associated with odors during construction and operation would be less than significant.

Cumulative Impacts

The potential for the project to result in a cumulatively considerable impact, per the SDAPCD guidance and thresholds, is based on the project's potential to exceed the project-specific daily thresholds. As discussed previously, maximum construction and operational emissions would not exceed the SDAPCD significance thresholds for VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$. Therefore, the project would not result in a cumulatively considerable increase in criteria air pollutants.

Greenhouse Gas Emissions

Global climate change is primarily considered a cumulative impact, but must also be evaluated on a project-level under CEQA. A project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of GHG emissions. GHGs are gases that absorb infrared radiation in the atmosphere. Principal GHGs regulated under state and federal law and regulations include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). GHG emissions are measured in metric tons of CO_2 equivalent (MT CO_2e), which account for weighted global warming potential factors for CH_4 and N_2O.

Project-Generated Construction and Operational Greenhouse Gas Emissions

The threshold applied to assess the potential for the project to generate GHG emissions either directly or indirectly that may have a significant impact on the environment was generated by the local and statewide long-term GHG reduction goals. Pursuant to the South Coast Air Quality Management District (SCAQMD) recommendation, construction emissions were amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies (SCAQMD 2008).

This analysis developed a City-specific efficiency metric threshold to determine significance of project-generated GHG emissions, which is expressed as MT CO_2e per service population per year. A project's "service population" refers to a project's residents plus employees that would be generated by the project. An efficiency metric is calculated by dividing the allowable GHG emissions inventory in a selected calendar year by the service population (residents plus employees), which then leads to the identification of a quantity of emissions that can be permitted on a per service population basis without significantly impacting the environment. This approach is appropriate for the project because it measures the project's emissions on a per service population basis to determine its overall GHG efficiency relative to regulatory GHG reduction goals.

Because there are no GHG emissions, employment, or population data specific to the project's build-out year of 2023, an efficiency metric threshold was generated for 2023 by interpolating the efficiency metrics for 2020 and 2035. The efficiency metric was calculated two ways—based on the City's Climate Action Plan (CAP) projections, and based on statewide GHG emission reductions targets—and the more stringent of the two calculated thresholds was applied in the analysis. First, for the CAP-based efficiency metric, the City's CAP emission reduction targets for 2020 and 2035 were used to calculate a linear trend line and emissions targets for each interim year. Second, to generate the statewide consistency threshold, the 2020 baseline interpolated to the project's build-out year, using the 5.2% rate of average annual decline identified by CARB as necessary to achieve the 2030 reduction target (40% below 1990 levels) set out in Senate Bill (SB) 32 and the 2050 reduction target (80% below 1990 levels) established in Executive Order (EO) S-3-05 (CARB 2015b). To develop a service population, SANDAG Series 13 Regional Growth Forecast was used to estimate employment, consistent with the residential population projections in the CAP. An emissions level per service population per year was generated by dividing the interpolated emissions by the corresponding forecasted service population. The calculated efficiency metric for 2023 based on the CARB Scoping Plan projected emissions trajectory was 4.48 MT per service population per year, which is more stringent than the CAP-based efficiency metric of 4.83 MT per service population per year; therefore, the former was applied to evaluate the significance of project-generated GHG emissions.

Construction of the project would result in GHG emissions primarily associated with use of off-road construction equipment, on-road hauling and vendor (i.e., material delivery) trucks, and worker vehicles. Total project-generated GHG emissions during construction were estimated to be 1,712 MT CO_2e over the construction period. Additionally, the project would disturb 15.55 acres and grade a total of 14.86 acres, with varying carbon content values, and would remove 53 trees, resulting in a sequestered carbon loss of 59 MT CO_2e. Estimated project-generated construction emissions plus the loss of sequestered carbon amortized over 30 years would be approximately 59 MT CO_2e per year.

The project would generate operational GHG emissions from area sources (e.g., landscape maintenance), energy sources (e.g., natural gas and electricity), mobile sources, solid waste, and water supply and wastewater treatment. Estimated annual project-generated operational GHG emissions would be approximately 3,011 MT CO_2e per year. Additionally, the project would plant 77 trees, resulting in a carbon sequestration offset of 55 MT CO_2e over the project lifetime, resulting in approximately 2 MT CO_2e of sequestration annually over 30 years. Estimated total annual project-generated operational emissions in 2023 and amortized project construction emissions would be approximately 3,068 MT CO_2e per year.

The project is anticipated to entail 353 employees, 146 full-time residents of the villas, 8 residents of the single-family housing units, 45 residents of the affordable housing, and 135 hotel guests, resulting in a service population of 687 people. Estimated annual GHG emissions of 3,068 MT CO_2e per year divided by a service population of 687 people is 4.47 MT CO_2e per service population per year. As such, annual operational GHG emissions with amortized construction emissions would not exceed the 2023 interpolated threshold of 4.48 MT CO_2e per service population per year. Therefore, the project-generated GHG emissions would result in a less than significant impact.

Consistency with Applicable Greenhouse Gas Reduction Plans

The City adopted a CAP in 2016. The CAP is not qualified under CEQA Section 15183.5, and is focused on City actions that could reduce GHG emissions and help the City meet its 2030 GHG reduction targets. Although the CAP does not include specific implementation actions for private development actions, the project is consistent with the objectives of the CAP goals to the extent the goals are applicable to the project. Additionally, the project would not interfere with the City's implementation of the CAP's goals; therefore, this impact would be less than significant. The project is also consistent with applicable policy objectives and strategies from SANDAG's San Diego Forward: The Regional Plan (SANDAG 2015). In addition, the project would not interfere with implementation of the GHG reduction goals for 2030 or 2050 as established in EO S-3-05 and SB 32. Accordingly, the project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions, and thus impacts would be less than significant.

1 INTRODUCTION

1.1 Report Purpose and Scope

The purpose of this report is to evaluate the potential air quality and greenhouse gas (GHG) emissions impacts associated with implementation of the Del Mar Beach Resort (project) located within the City of Del Mar (City). This assessment uses the significance thresholds in Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.), and is based on the emissions-based significance thresholds recommended by the San Diego Air Pollution Control District (SDAPCD) and other applicable thresholds of significance.

This introductory section provides a description of the project and the project location. Section 2, Air Quality, describes the air quality-related environmental setting, regulatory setting, existing air quality conditions, and thresholds of significance and analysis methodology. Section 2 also presents an air quality impact analysis, per Appendix G of the CEQA Guidelines. Section 3, Greenhouse Gas Emissions, follows the same format as Section 2 and similarly describes the GHG emissions-related environmental setting, regulatory setting, existing climate change conditions, and thresholds of significance and analysis methodology. Similarly, Section 3 also presents a GHG emissions impact analysis per Appendix G of the CEQA Guidelines. Section 4, References Cited, includes a list of the references cited. Section 5, List of Preparers, includes a list of those who prepared this technical report.

1.2 Project Location

The project site includes approximately 17.45 acres of land located south of Border Avenue and west of Camino Del Mar, as well as a portion east of Camino Del Mar, in the northwestern corner of the City of Del Mar (see Figure 1). The Plan Area is comprised of 16.55 acres of privately owned land, 0.78 acres of public right-of-way along Camino Del Mar, and a 0.12-acre City coastal viewing access parcel located at the northern extent of the Plan Area. The site comprises eight parcels, seven of which are vacant including Assessor's Parcel Numbers 298-241-06, 07, 29, 34, 35, 36, and 299-030-14 and 15. A one-story, 5,800 square foot residence (with accessory garage structure and pool cabana building) is located on the most southern parcel of the project site (Assessor's Parcel Number: 299-030-15-00).

Additional land that may be included in the project area includes the City of Del Mar North Bluff Preserve (Assessor's Parcel Number: 299-030-07), Camino del Mar public right-of-way easterly and adjacent to the site, portions of North Beach, and a City coastal viewing access easement (Assessor's Parcel Number: 298-241-18) located at the northern extent of the project site (see Figure 2).

1.3 Project Description

The project consists of a Specific Plan including five land use sub-designations: Visitor Serving Accommodations (VSA), Parkland/Passive Open Space (PPOS), Coastal Bluff Protection Area (CBPA) and Steep Slope Protection Area (SSPA). The VSA land use sub-designation allows for the development of approximately 65 hotel guest rooms, 31 villas (some of which may be used as hotel guest rooms when not in use by owners, subject to provisions in the Specific Plan), 10 lower-cost shared visitor-serving accommodations, 22 affordable housing units, and associated amenities. Amenities include, but are not limited to, restaurants, bar/lounge, special event space, meeting space, swimming pools, a spa and fitness center and retail.

The PPOS land use sub-designation allows for public amenities such as trails, vista points, picnic areas, public access stairway and public restrooms, and passive recreational uses. Passive recreational uses are defined in the Specific plan as low intensity recreational activities that require little or no infrastructure and that are geared toward the viewing and appreciation of scenic and environmentally sensitive areas.

The CBPA and SSPA land use sub-designations serve as protection areas. The only disturbance allowed within the CBPA is the minimal amount necessary to install drainage control measures to protect a coastal bluff area from degradation and/or erosion. Shoreline protection devices are prohibited in this area. The only disturbance allowed within the SSPA is the minimal amount necessary to provide a public access stairway, public restrooms, and related facilities for hotel and public visitor services at the toe of slope; to implement drainage control measures to protect the steep slope area from degradation and/or erosion; and to allow interpretive signage and pathway lighting.

Off-site improvements include a new potable water main for the project to extend into the City in order to find a suitable connection point. The existing water mains servicing the northernmost houses before the entrance to the lagoon are currently served by either an existing 4-inch or 6-inch water main, which would not have sufficient capacity to serve as the connection point for the new water main. Two alternatives for the proposed water main are being analyzed. Both alternatives consist of constructing a new 16-inch diameter pipeline. One alternative is to construct approximately 4,500 linear feet of new 16-inch water main in Via de la Valle from the intersection of Via de la Valle San Dieguito Drive and Jimmy Durante Boulevard to via 28th Street and Camino Del Mar within the City. The second alternative would construct approximately 5,000 linear feet of 16-inch pipe connected to an existing 20-inch City of Del Mar pipeline beginning on the west side of the intersection of Jimmy Durante Boulevard and San Dieguito Drive. This pipeline would extend northwest, following the Public Works Yard paved access road, then go along the dirt access road adjacent to the Public Works Yard up to the proposed crossing of the railroad right-of-way and drainage ditch. The work to cross the railroad right-of-way and drainage ditch would be done using a jack-and-bore construction method to avoid interruption of these resources. Then the pipeline would

continue west via 27th or 28th Street to Camino Del Mar, then north to Via De La Valle. This alternative would replace existing pipelines south of Sandy Lane and construct new pipelines north of Sandy Lane to Via de la Valle. All pipeline construction and replacement would occur within paved roads, City and North County Transit District right-of-way, or the Public Works yard.

1.4 Project Design Features

The following Project Design Features (PDFs) shall be included in the project:

PDF-AQ-1 **Architectural Coating Limits**. The project shall comply with the following volatile organic compound (VOC) content limits for architectural coatings for residential and non-residential and uses: 50 grams per liter VOC for interior surfaces and 100 grams per liter VOC for exterior coatings.

PDF-AQ-2 **Facilitate Use of Electrical Lawn and Garden Equipment**. Prior to the issuance of residential building permits, the applicant or its designee shall provide evidence to the County of San Diego that building design plans require that residential structures be equipped with outdoor electric outlets in the front and rear of the structure to facilitate use of electrical lawn and garden equipment.

PDF-AQ/GHG-1 **Wood Burning Stoves and Fireplaces**. Prior to the issuance of building permits, the project applicant or its designee shall submit building plans illustrating that no wood burning stoves or fireplaces would be constructed.

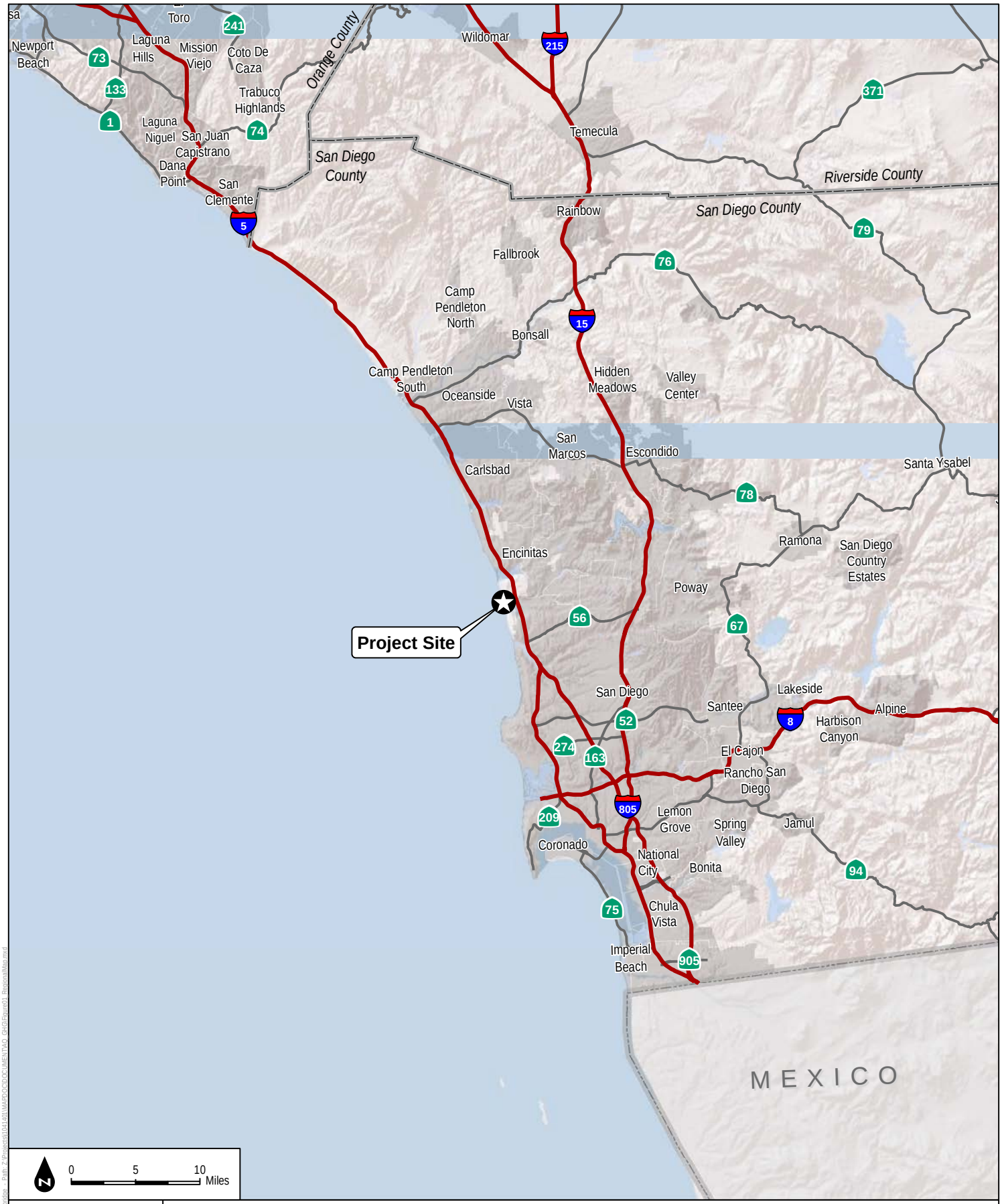
PDF-AQ/GHG-2 **Photovoltaic Generation**. Prior to the issuance of building permits, the project applicant or its designee shall submit building plans illustrating that the project will install photovoltaic systems, which would generate 45% of project-wide energy demand.

PDF-AQ/GHG-3 **Green Power Purchase (Electricity)**. Prior to the issuance of certificates of occupancy, the project applicant shall demonstrate that the project has an agreement in place to purchase at minimum 75% green power (electricity) from the City's or equivalent Community Choice Aggregate program to offset all remaining electricity demand from the project that is not provided by on-site solar power.

PDF-AQ/GHG-4 **Transportation Demand Management**. The following Transportation Demand Management (TDM) measures shall be implemented.

- Provide a Commute Transportation Information Display (e.g., bulletin board) to be placed in a common area that is accessible by all employees (e.g., employee lounge).
- Designate 8% of total parking as designated for low emitting, or fuel-efficient and carpool/van pool vehicles
- Provide short-term and long-term bicycle parking spaces consisting of convenient and secure, permanently anchored bicycle racks.
- Provide a free shuttle service for employees from the Solana Beach train station.
- Provide an airport/train station shuttle service for guests on an "on-demand" basis. Pickups/drop-offs to and from the airport and train station will be made via the hotel's website when booking, via phone, or in person with the hotel's front desk.
- Provide employees with 511 San Diego Compass Card—compatible with use on Metropolitan Transit System Bus, Rapid, Rapid Express, Trolley, and North County Transit District Breeze, Coaster, or Sprinter transit services—on which fares can be stored.
- Offer employees the value of one month's transit fare (i.e., up to the value of a 511 San Diego Compass Card 30-day pass) to be provided on an employee's existing Compass Card (for one month per employee).
- Provide free shuttle services for employees from the Solana Beach Coaster station.
- Provide alternate work schedules, including housekeeping, customer service, and restaurant employees.
- Provide 1% of the parking spaces to be equipped with electric vehicle charging equipment and an additional 1% of total parking as 'Electric Vehicle Capable'.

To ensure that the TDM Program strategies are implemented and effective, a resort employee would be designated transportation coordinator (likely as part of an Human Resource personnel role) would be established to monitor the TDM Program, and would be responsible for developing, marketing, implementing, and evaluating the TDM Program.



SOURCE: ESRI 2017

FIGURE 1

Regional Map

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Del Mar Resort Air Quality and Greenhouse Gas Emissions Analysis Technical Report

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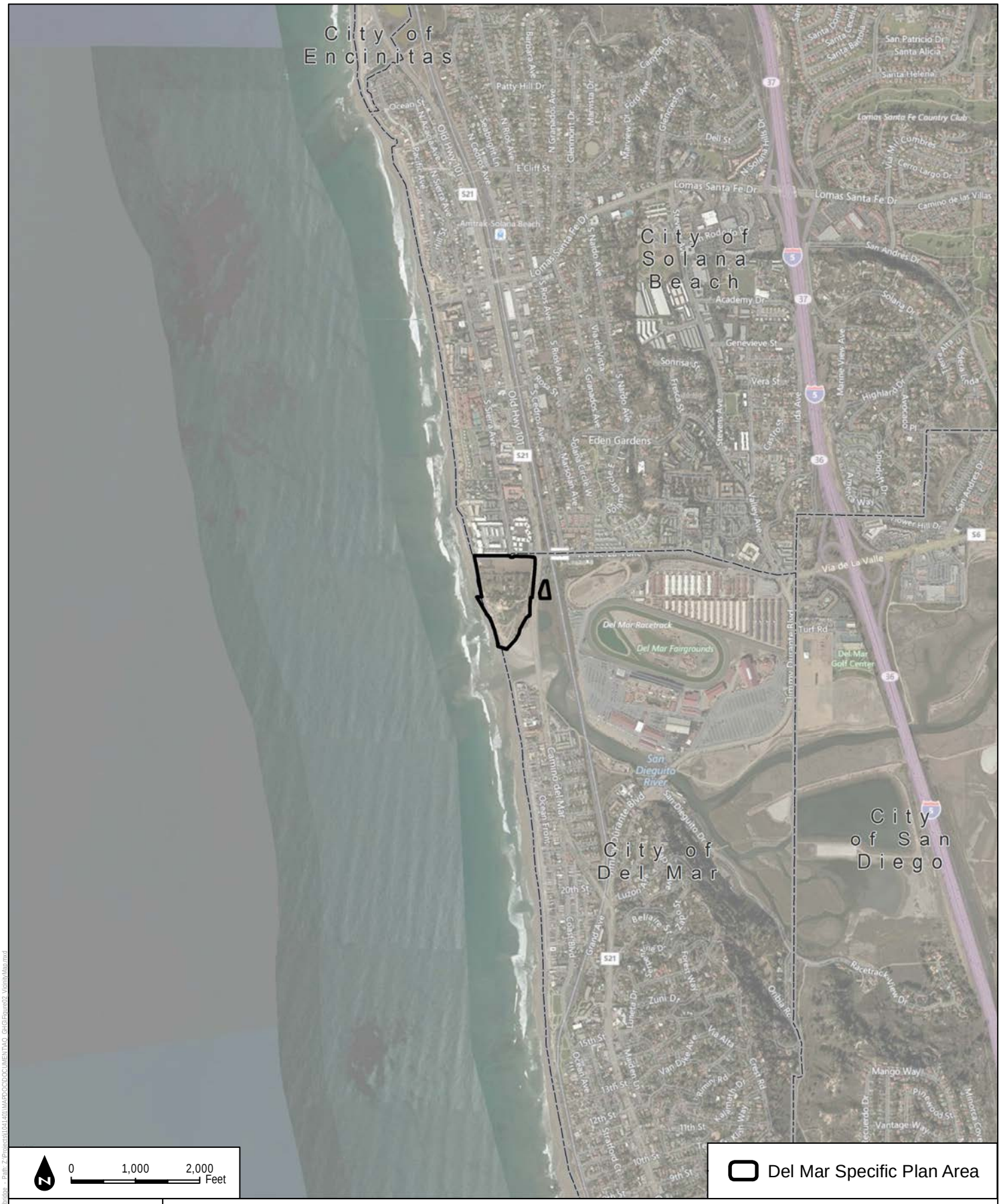

SOURCE: Bing Maps 2018

FIGURE 2

Vicinity Map

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Del Mar Resort Air Quality and Greenhouse Gas Emissions Analysis Technical Report

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2 AIR QUALITY

2.1 Environmental Setting

The project site is located within the San Diego Air Basin (SDAB or basin) and is subject to SDAPCD guidelines and regulations. The SDAB is one of 15 air basins that geographically divide the State of California. The SDAB comprises the entire San Diego region and covers approximately 4,260 square miles.

2.1.1 Climate, Meteorological, and Topographical Conditions

The primary factors that determine air quality are the locations of air pollutant sources and the amount of pollutants emitted. Meteorological and topographical conditions, however, are also important. Factors such as wind speed and direction, air temperature gradients and sunlight, and precipitation and humidity interact with physical landscape features to determine the movement and dispersal of air pollutants. Meteorological and topographical factors that affect air quality in the SDAB are described below.[1]

Regional Climate and Meteorological Conditions

The climate of the San Diego region, as in most of Southern California, is influenced by the strength and position of the semi-permanent high-pressure system over the Pacific Ocean, known as the Pacific High. This high-pressure ridge over the West Coast often creates a pattern of late-night and early-morning low clouds, hazy afternoon sunshine, daytime onshore breezes, and little temperature variation year-round. The SDAB is characterized as a Mediterranean climate with dry, warm summers and mild, occasionally wet winters. Average temperature ranges (in degrees Fahrenheit (°F)) from the mid-40s to the high 90s, with an average of 201 days warmer than 70°F. The SDAB experiences 9 to 13 inches of rainfall annually, with most of the region's precipitation falling from November through March, and infrequent (approximately 10%) precipitation during the summer. El Niño and La Niña patterns have significant effects on the annual rainfall received in San Diego, where San Diego receives less than normal rainfall during La Niña years.

The interaction of ocean, land, and the Pacific High maintains clear skies for much of the year and influences the direction of prevailing winds (westerly to northwesterly). The winds tend to blow onshore in the day and offshore at night. Local terrain is often the dominant factor inland, and

[1] The discussion of meteorological and topographical conditions of the SDAB is based on information provided in the SDAPCD *2016 Monitoring Plan* (SDAPCD 2017a), the County of San Diego *Guidelines for Determining Significance – Air Quality* (County of San Diego 2007), the County of San Diego *General Plan Update EIR* (County of San Diego 2011), and the CARB *Recommended Area Designation for the 2010 Federal Sulfur Dioxide Standard* (CARB 2011a).

winds in inland mountainous areas tend to blow through the valleys during the day and down the hills and valleys at night.

The favorable climate of San Diego also works to create air pollution problems. Sinking, or subsiding air from the Pacific High, creates a temperature inversion known as a subsidence inversion, which acts as a "lid" to vertical dispersion of pollutants. Weak summertime pressure gradients further limit horizontal dispersion of pollutants in the mixed layer below the subsidence inversion. Poorly dispersed anthropogenic emissions combined with strong sunshine leads to photochemical reactions that result in the creation of ozone (O_3) at this surface layer. In addition, light winds during the summer further limit ventilation.

In the fall months, the SDAB is often impacted by Santa Ana winds, which are the result of a high-pressure system over the Nevada and Utah regions that overcomes the westerly wind pattern and forces hot, dry winds from the east to the Pacific Ocean. The Santa Ana winds are powerful and can blow the SDAB's pollutants out to sea. However, a weak Santa Ana can transport air pollution from the South Coast Air Basin, located north of the SDAB, and greatly increase O_3 concentrations in the San Diego area.

Under certain conditions, atmospheric oscillation results in the offshore transport of air from the Los Angeles region to San Diego County (County). This often produces high O_3 concentrations, as measured at air pollutant monitoring stations within the County. The transport of air pollutants from Los Angeles to San Diego can also occur within the stable layer of the elevated subsidence inversion, where high levels of O_3 are transported.

Site-Specific Meteorological Conditions

The local climate in the San Diego region is characterized as semi-arid with consistently mild, warmer temperatures throughout the year. The average summertime high temperature in the region is approximately 80°F. The average wintertime low temperature is approximately 45°F. Average precipitation in the local area is approximately 10 inches per year, with the bulk of precipitation falling between December and March (WRCC 2009).

Topographical Conditions

Topography in the San Diego region varies greatly, from beaches in the west to mountains and desert in the east; much of the topography in between consists of mesa tops intersected by canyon areas. Along with local meteorology, topography influences the dispersal and movement of pollutants in the SDAB. Mountains to the east prohibit dispersal of pollutants in that direction and help trap pollutants in inversion layers.

The topography of the SDAB also drives pollutant levels, and the SDAB is classified as a "transport recipient," whereby pollutants are transported from the South Coast Air Basin to the north and, when the wind shifts direction, from Tijuana, Mexico, to the south.

2.1.2 Pollutants and Effects

2.1.2.1 Criteria Air Pollutants

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The national and California standards have been set, with an adequate margin of safety, at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include O_3, nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM_{10}), particulate matter with an aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$), and lead. These pollutants, as well as toxic air contaminants (TACs), are discussed in the following paragraphs.[2] In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants.

Ozone. O_3 is a strong-smelling, pale blue, reactive, toxic chemical gas consisting of three oxygen atoms. It is a secondary pollutant formed in the atmosphere by a photochemical process involving the sun's energy and O_3 precursors. These precursors are mainly oxides of nitrogen (NO_x) and volatile organic compounds (VOCs). The maximum effects of precursor emissions on O_3 concentrations usually occur several hours after they are emitted and many miles from the source. Meteorology and terrain play major roles in O_3 formation, and ideal conditions occur during summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. O_3 exists in the upper atmosphere O_3 layer (stratospheric O_3) and at the Earth's surface in the troposphere (ground-level O_3).[3] The O_3 that the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) regulate as a criteria air pollutant is produced close to the ground level, where people live, exercise, and breathe. Ground-level O_3 is a harmful air pollutant that causes numerous adverse health effects and is thus considered "bad" O_3. Stratospheric, or "good," O_3 occurs naturally in the upper atmosphere, where it reduces the amount of ultraviolet light (i.e., solar radiation) entering the Earth's atmosphere. Without the protection of the beneficial stratospheric O_3 layer, plant and animal life would be seriously harmed.

[2] The descriptions of each of the criteria air pollutants and associated health effects are based on the U.S. Environmental Protection Agency's (EPA's) Criteria Air Pollutants (EPA 2018a) and the California Air Resources Board's (CARB's) Glossary of Air Pollutant Terms (CARB 2019a).

[3] The troposphere is the layer of the Earth's atmosphere nearest to the surface of the Earth. The troposphere extends outward about 5 miles at the poles and about 10 miles at the equator.

O_3 in the troposphere causes numerous adverse health effects; short-term exposures (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes (EPA 2013). These health problems are particularly acute in sensitive receptors such as the sick, the elderly, and young children.

Inhalation of O_3 causes inflammation and irritation of the tissues lining human airways, causing and worsening a variety of symptoms. Exposure to O_3 can reduce the volume of air that the lungs breathe in and cause shortness of breath. O_3 in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. The occurrence and severity of health effects from O_3 exposure vary widely among individuals, even when the dose and the duration of exposure are the same. Research shows adults and children who spend more time outdoors participating in vigorous physical activities are at greater risk from the harmful health effects of O_3 exposure. While there are relatively few studies of O_3's effects on children, the available studies show that children are no more or less likely to suffer harmful effects than adults. However, there are a number of reasons why children may be more susceptible to O_3 and other pollutants. Children and teens spend nearly twice as much time outdoors and engaged in vigorous activities as adults. Children breathe more rapidly than adults and inhale more pollution per pound of their body weight than adults. Also, children are less likely than adults to notice their own symptoms and avoid harmful exposures. Further research may be able to better distinguish between health effects in children and adults. Children, adolescents and adults who exercise or work outdoors, where O_3 concentrations are the highest, are at the greatest risk of harm from this pollutant (CARB 2019b).

Nitrogen Dioxide and Oxides of Nitrogen. NO_2 is a brownish, highly reactive gas that is present in all urban atmospheres. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide, which is a colorless, odorless gas. NO_x plays a major role, together with VOCs, in the atmospheric reactions that produce O_3. NO_x is formed from fuel combustion under high temperature or pressure. In addition, NO_x is an important precursor to acid rain and may affect both terrestrial and aquatic ecosystems. The two major emissions sources are transportation and stationary fuel combustion sources (such as electric utility and industrial boilers).

A large body of health science literature indicates that exposure to NO_2 can induce adverse health effects. The strongest health evidence, and the health basis for the ambient air quality standards (AAQS) for NO_2, results from controlled human exposure studies that show that NO_2 exposure can intensify responses to allergens in allergic asthmatics. In addition, a number of epidemiological studies have demonstrated associations between NO_2 exposure and premature death, cardiopulmonary effects, decreased lung function growth in children, respiratory symptoms, emergency room visits for asthma, and intensified allergic responses. Infants and children are particularly at risk because they have disproportionately higher exposure to NO_2 than adults due to their greater breathing rate for their body weight and their typically greater outdoor exposure

duration. Several studies have shown that long-term NO_2 exposure during childhood, the period of rapid lung growth, can lead to smaller lungs at maturity in children with higher levels of exposure compared to children with lower exposure levels. In addition, children with asthma have a greater degree of airway responsiveness compared with adult asthmatics. In adults, the greatest risk is to people who have chronic respiratory diseases, such as asthma and chronic obstructive pulmonary disease (CARB 2019c).

Carbon Monoxide. CO is a colorless, odorless gas formed by the incomplete combustion of hydrocarbon, or fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, such as the project location, automobile exhaust accounts for the majority of CO emissions. CO is a nonreactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions—primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, which is a typical situation at dusk in urban areas from November to February. The highest levels of CO typically occur during the colder months of the year, when inversion conditions are more frequent.

CO is harmful because it binds to hemoglobin in the blood, reducing the ability of blood to carry oxygen. This interferes with oxygen delivery to the body's organs. The most common effects of CO exposure are fatigue, headaches, confusion and reduced mental alertness, light-headedness, and dizziness due to inadequate oxygen delivery to the brain. For people with cardiovascular disease, short-term CO exposure can further reduce their body's already compromised ability to respond to the increased oxygen demands of exercise, exertion, or stress. Inadequate oxygen delivery to the heart muscle leads to chest pain and decreased exercise tolerance. Unborn babies whose mothers experience high levels of CO exposure during pregnancy are at risk of adverse developmental effects. Unborn babies, infants, elderly people, and people with anemia or with a history of heart or respiratory disease are most likely to experience health effects with exposure to elevated levels of CO (CARB 2019d).

Sulfur Dioxide. SO_2 is a colorless, pungent gas formed primarily from incomplete combustion of sulfur-containing fossil fuels. The main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels.

Controlled human exposure and epidemiological studies show that children and adults with asthma are more likely to experience adverse responses with SO_2 exposure, compared with the non-asthmatic population. Effects at levels near the 1-hour standard are those of asthma exacerbation, including bronchoconstriction accompanied by symptoms of respiratory irritation such as wheezing, shortness

of breath, and chest tightness, especially during exercise or physical activity. Also, exposure at elevated levels of SO_2 (above 1 parts per million [ppm]) results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality. The elderly and people with cardiovascular disease or chronic lung disease (such as bronchitis or emphysema) are most likely to experience these adverse effects (CARB 2019e).

SO_2 is of concern both because it is a direct respiratory irritant and because it contributes to the formation of sulfate and sulfuric acid in particulate matter (NRC 2005). People with asthma are of particular concern, both because they have increased baseline airflow resistance and because their SO_2-induced increase in airflow resistance is greater than in healthy people, and it increases with the severity of their asthma (NRC 2005). SO_2 is thought to induce airway constriction via neural reflexes involving irritant receptors in the airways (NRC 2005).

Particulate Matter. Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Coarse particulate matter (PM_{10}) consists of particulate matter that is 10 microns or less in diameter and is about 1/7 the diameter of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. Fine particulate matter ($PM_{2.5}$) consists of particulate matter that is 2.5 microns or less in diameter and is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., from motor vehicles and power generation and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as SO_x, NO_x, and VOCs.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances such as lead, sulfates, and nitrates can cause lung damage directly or be absorbed into the blood stream, causing damage elsewhere in the body. Additionally, these substances can transport adsorbed gases such as chlorides or ammonium into the lungs, also causing injury. Whereas PM_{10} tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper into the lungs and damage lung tissue. Suspended particulates also produce haze and reduce regional visibility and damage and discolor surfaces on which they settle.

A number of adverse health effects have been associated with exposure to both $PM_{2.5}$ and PM_{10}. For $PM_{2.5}$, short-term exposures (up to 24-hour duration) have been associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis,

asthma attacks, emergency room visits, respiratory symptoms, and restricted activity days. These adverse health effects have been reported primarily in infants, children, and older adults with preexisting heart or lung diseases. In addition, of all of the common air pollutants, $PM_{2.5}$ is associated with the greatest proportion of adverse health effects related to air pollution, both in the United States and worldwide based on the World Health Organization's Global Burden of Disease Project. Short-term exposures to PM_{10} have been associated primarily with worsening of respiratory diseases, including asthma and chronic obstructive pulmonary disease, leading to hospitalization and emergency department visits (CARB 2017a).

Long-term exposure (months to years) to $PM_{2.5}$ has been linked to premature death, particularly in people who have chronic heart or lung diseases, and reduced lung function growth in children. The effects of long-term exposure to PM_{10} are less clear, although several studies suggest a link between long-term PM_{10} exposure and respiratory mortality. The International Agency for Research on Cancer published a review in 2015 that concluded that particulate matter in outdoor air pollution causes lung cancer (CARB 2017a).

Lead. Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline; the manufacturing of batteries, paints, ink, ceramics, and ammunition; and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phaseout of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phaseout of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emissions sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth. Children are highly susceptible to the effects of lead. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth.

Sulfates. Sulfates are the fully oxidized form of sulfur, which typically occur in combination with metals or hydrogen ions. Sulfates are produced from reactions of SO_2 in the atmosphere and can result in respiratory impairment, as well as reduced visibility.

Vinyl Chloride. Vinyl chloride is a colorless gas with a mild, sweet odor, which has been detected near landfills, sewage plants, and hazardous waste sites, due to the microbial breakdown of chlorinated solvents. Short-term exposure to high levels of vinyl chloride in air can cause nervous

system effects, such as dizziness, drowsiness, and headaches. Long-term exposure through inhalation can cause liver damage, including liver cancer.

Hydrogen Sulfide. Hydrogen sulfide is a colorless and flammable gas that has a characteristic odor of rotten eggs. Sources of hydrogen sulfide include geothermal power plants, petroleum refineries, sewers, and sewage treatment plants. Exposure to hydrogen sulfide can result in nuisance odors, as well as headaches and breathing difficulties at higher concentrations.

Visibility-Reducing Particles. Visibility-reducing particles are any particles in the air that obstruct the range of visibility. Effects of reduced visibility can include obscuring the viewshed of natural scenery, reducing airport safety, and discouraging tourism. Sources of visibility-reducing particles are the same as for $PM_{2.5}$ described above.

Volatile Organic Compounds. Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of O_3 are referred to and regulated as VOCs (also referred to as reactive organic gases). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the primary sources of hydrocarbons. Other sources include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

The primary health effects of VOCs result from the formation of O_3 and its related health effects. High levels of VOCs in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic (i.e., cancer-causing) forms of hydrocarbons, such as benzene, are considered toxic air contaminants (TACs). There are no separate health standards for VOCs as a group.

2.1.2.2 Non-Criteria Air Pollutants

Toxic Air Contaminants. A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute and/or chronic noncancer health effects. A toxic substance released into the air is considered a TAC. TACs are identified by federal and state agencies based on a review of available scientific evidence. In California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere. The law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location

of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years.

Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

Diesel Particulate Matter. Diesel particulate matter (DPM) is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases, gas and particle, both of which contribute to health risks. More than 90% of DPM is less than 1 micrometer in diameter (about 1/70th the diameter of a human hair), and thus is a subset of $PM_{2.5}$. DPM is typically composed of carbon particles ("soot," also called black carbon, or BC) and numerous organic compounds, including over 40 known cancer-causing organic substances. Examples of these chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene. The CARB classified "particulate emissions from diesel-fueled engines" (i.e., DPM; 17 CCR 93000) as a TAC in August 1998. DPM is emitted from a broad range of diesel engines: on-road diesel engines of trucks, buses, and cars and off-road diesel engines including locomotives, marine vessels, and heavy-duty construction equipment, among others. Approximately 70% of all airborne cancer risk in California is associated with DPM (CARB 2000). To reduce the cancer risk associated with DPM, CARB adopted a diesel risk reduction plan in 2000 (CARB 2000). Because it is part of $PM_{2.5}$, DPM also contributes to the same non-cancer health effects as $PM_{2.5}$ exposure. These effects include premature death; hospitalizations and emergency department visits for exacerbated chronic heart and lung disease, including asthma; increased respiratory symptoms; and decreased lung function in children. Several studies suggest that exposure to DPM may also facilitate development of new allergies. Those most vulnerable to non-cancer health effects are children whose lungs are still developing and the elderly who often have chronic health problems.

Odorous Compounds. Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population and overall is quite subjective. People may have different reactions to the same odor. For instance, an odor that is offensive to one person may be perfectly acceptable to another (e.g., coffee roaster). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. Known as odor fatigue, a person can become desensitized to almost any odor, and recognition may only occur with an alteration in the

intensity. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

2.1.3 Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. People most likely to be affected by air pollution include children, the elderly, athletes, and people with cardiovascular and chronic respiratory diseases. Facilities and structures where these air pollution-sensitive people live or spend considerable amounts of time are known as sensitive receptors. Land uses where air pollution-sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (sensitive sites or sensitive land uses) (CARB 2005).

The nearest existing sensitive receptors are located adjacent to the project site's northern boundary. Receptors also include visitors and residents of the project.

2.2 Regulatory Setting

2.2.1 Federal Regulations

2.2.1.1 Criteria Air Pollutants

The federal Clean Air Act, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The EPA is responsible for implementing most aspects of the Clean Air Act, including setting National Ambient Air Quality Standards (NAAQS) for major air pollutants; setting hazardous air pollutants (HAPs) standards; approving state attainment plans; setting motor vehicle emission standards; issuing stationary source emission standards and permits; and establishing acid rain control measures, stratospheric O_3 protection measures, and enforcement provisions. Under the Clean Air Act, NAAQS are established for the following criteria pollutants: O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead.

The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The NAAQS (other than for O_3, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. NAAQS for O_3, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over 1- to 3-year periods, depending on the pollutant. The Clean Air Act requires the EPA to reassess the NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a state implementation plan (SIP) that demonstrates how those areas will attain the standards within mandated time frames.

2.2.1.2 Hazardous Air Pollutants

The 1977 federal Clean Air Act amendments required the EPA to identify National Emission Standards for Hazardous Air Pollutants to protect public health and welfare. HAPs include certain VOCs, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. Under the 1990 Clean Air Act amendments, which expanded the control program for HAPs, 187 substances and chemical families were identified as HAPs.

2.2.2 State Regulations

2.2.2.1 Criteria Air Pollutants

The federal Clean Air Act delegates the regulation of air pollution control and the enforcement of the NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to CARB, with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels. CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for ensuring implementation of the California Clean Air Act of 1988, responding to the federal Clean Air Act, and regulating emissions from motor vehicles and consumer products.

CARB has established California Ambient Air Quality Standards (CAAQS), which are generally more restrictive than the NAAQS. The CAAQS describe adverse conditions; that is, pollution levels must be below these standards before a basin can attain the standard. Air quality is considered "in attainment" if pollutant levels are continuously below the CAAQS and violate the standards no more than once each year. The CAAQS for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, PM_{10}, and $PM_{2.5}$ and visibility-reducing particles are values not to be exceeded. All others are not to be equaled or exceeded. The NAAQS and CAAQS are presented in Table 1.

Table 1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	*Primary[c,d]*	*Secondary[c,e]*
O_3	1 hour	0.09 ppm (180 μg/m³)	—	Same as Primary Standard[f]
	8 hours	0.070 ppm (137 μg/m³)	0.070 ppm (137 μg/m³)[f]	
NO_2[g]	1 hour	0.18 ppm (339 μg/m³)	0.100 ppm (188 μg/m³)	Same as Primary Standard
	Annual Arithmetic Mean	0.030 ppm (57 μg/m³)	0.053 ppm (100 μg/m³)	
CO	1 hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	None
	8 hours	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	
SO_2[h]	1 hour	0.25 ppm (655 μg/m³)	0.075 ppm (196 μg/m³)	—

Table 1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	*Primary*[c,d]	*Secondary*[c,e]
	3 hours	—	—	0.5 ppm (1,300 µg/m³)
	24 hours	0.04 ppm (105 µg/m³)	0.14 ppm (for certain areas)[g]	—
	Annual	—	0.030 ppm (for certain areas)[g]	—
PM_{10}[i]	24 hours	50 µg/m³	150 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m³	—	
$PM_{2.5}$[i]	24 hours	—	35 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m³	12 µg/m³	15 µg/m³
Lead[j,k]	30-day Average	1.5 µg/m³	—	—
	Calendar Quarter	—	1.5 µg/m³ (for certain areas)[k]	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 µg/m³	
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m³)	—	—
Vinyl chloride[j]	24 hours	0.01 ppm (26 µg/m³)	—	—
Sulfates	24 hours	25 µg/m³	—	—
Visibility reducing particles	8 hours (10:00 a.m. to 6:00 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to the number of particles when the relative humidity is less than 70%	—	—

Source: CARB 2016.

Notes: µg/m³ = micrograms per cubic meter; mg/m³= milligrams per cubic meter; ppm = parts per million by volume; O_3 = ozone; NO_2 = nitrogen dioxide; CO = carbon monoxide; SO_2 = sulfur dioxide; PM_{10} = particulate matter with an aerodynamic diameter less than or equal to 10 microns; $PM_{2.5}$ = particulate matter with an aerodynamic diameter less than or equal to 2.5 microns.

a California standards for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, suspended particulate matter (PM_{10}, $PM_{2.5}$), and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

b National standards (other than O_3, NO_2, SO_2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once per year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

c Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

d National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[e] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[f] On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[g] To attain the national 1-hour standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb). Note that the national 1-hour standard is in units of ppb. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[h] On June 2, 2010, a new 1-hour SO_2 standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the national 1-hour standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment of the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[i] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ were also retained. The form of the annual primary and secondary standards is the annual mean averaged over 3 years.

[j] CARB has identified lead and vinyl chloride as TACs with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[k] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

2.2.2.2 Toxic Air Contaminants

The state Air Toxics Program was established in 1983 under AB 1807 (Tanner). The California TAC list identifies more than 700 pollutants, of which carcinogenic and noncarcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health and Safety Code. In accordance with AB 2728, the state list includes the (federal) HAPs. The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) seeks to identify and evaluate risk from air toxics sources; however, AB 2588 does not regulate air toxics emissions. TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. The regulation is anticipated to result in an 80% decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000 (CARB 2000). Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In-Use Off-Road Diesel Vehicle Regulation, and the New Off-Road Compression-Ignition (Diesel) Engines and Equipment Program. All of these regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel powered equipment. Several Airborne Toxic Control Measures that reduce diesel emissions including in-use off-road diesel-fueled fleets (13 CCR 2449 et seq.) and in-use on-road diesel-fueled vehicles (13 CCR 2025).

California Health and Safety Code Section 41700

Section 41700 of the Health and Safety Code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health, or safety of any of those persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property. This section also applies to sources of objectionable odors.

2.2.3 Local Regulations

2.2.3.1 San Diego Air Pollution Control District

CARB is responsible for the regulation of mobile emission sources within the state, and local air quality management districts and air pollution control districts are responsible for enforcing standards and regulating stationary sources. The project site is located within the SDAB and is subject to the guidelines and regulations of the SDAPCD.

In San Diego County, O_3 and particulate matter are the pollutants of main concern, since the County exceeds state ambient air quality standards for those pollutants most years. For this reason, the SDAB has been designated as a nonattainment area for the state PM_{10}, $PM_{2.5}$, and O_3 standards. The SDAB is also a federal O_3 attainment (maintenance) area for 1997 8-hour O_3 standard, an O_3 nonattainment area for the 2008 8-hour O_3 standard, and a CO maintenance area (western and central part of the SDAB only, including the project area).

Federal Attainment Plans

In December 2016, the SDAPCD adopted an update to the Eight-Hour Ozone Attainment Plan for San Diego County (2008 O_3 NAAQS). The 2016 Eight-Hour Ozone Attainment Plan for San Diego County indicates that local controls and state programs would allow the region to reach attainment of the federal 8-hour O_3 standard (1997 O_3 NAAQS) by 2018 (SDAPCD 2016a). In this plan, SDAPCD relies on the Regional Air Quality Strategy (RAQS) to demonstrate how the region will comply with the federal O_3 standard. The RAQS details how the region will manage and reduce O_3 precursors (NO_x and VOCs) by identifying measures and regulations intended to reduce these pollutants. The control measures identified in the RAQS generally focus on stationary sources; however, the emissions inventories and projections in the RAQS address all potential sources, including those under the authority of CARB and the EPA. Incentive programs for reduction of emissions from heavy-duty diesel vehicles, off-road equipment, and school buses are also established in the RAQS.

Currently, the County is designated as moderate nonattainment for the 2008 NAAQS and maintenance for the 1997 NAAQS. As documented in the 2016 Eight-Hour Ozone Attainment Plan for San Diego County, the County has a likely chance of obtaining attainment due to the transition to low emission cars, stricter new source review rules, and continuing the requirement of general conformity for military growth and the San Diego International Airport. The County will also continue emission control measures including ongoing implementation of existing regulations in ozone precursor reduction to stationary and area-wide sources, subsequent inspections of facilities and sources, and the adoption of laws requiring Best Available Retrofit Control Technology for control of emissions (SDAPCD 2016a).

State Attainment Plans

The SDAPCD and The San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The RAQS for the SDAB was initially adopted in 1991 and is updated on a triennial basis, most recently in 2016 (SDAPCD 2016a). The RAQS outlines SDAPCD's plans and control measures designed to attain the state air quality standards for O_3. The RAQS relies on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in San Diego County and the cities in the County, to forecast future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by San Diego County and the cities in the County as part of the development of their general plans (SANDAG 2017a, 2017b).

In December 2016, the SDAPCD adopted the revised RAQS for the County. Since 2007, the San Diego region reduced daily VOC emissions and NO_x emissions by 3.9% and 7.0% respectively; the SDAPCD expects to continue reductions through 2035 (SDAPCD 2016a). These reductions were achieved through implementation of six VOC control measures and three NO_x control measures adopted in the SDAPCD's 2009 RAQS (SDAPCD 2009). The SDAPCD is also considering additional measures, including three VOC measures and four control measures to reduce 0.3 daily tons of VOC and 1.2 daily tons of NO_x, provided they are found to be feasible region-wide. In addition, SDAPCD has implemented nine incentive-based programs, has worked with SANDAG to implement regional transportation control measures, and has reaffirmed the state emission offset repeal.

In regards to particulate matter emissions reduction efforts, in December 2005, the SDAPCD prepared a report titled "Measures to Reduce Particulate Matter in San Diego County" to address implementation of Senate Bill (SB) 656 in San Diego County (SB 656 required additional controls to reduce ambient concentrations of PM_{10} and $PM_{2.5}$) (SDAPCD 2005). In the report, SDAPCD

evaluated implementation of source-control measures that would reduce particulate matter emissions associated with residential wood combustion; various construction activities including earthmoving, demolition, and grading; bulk material storage and handling; carryout and track-out removal and cleanup methods; inactive disturbed land; disturbed open areas; unpaved parking lots/staging areas; unpaved roads; and windblown dust (SDAPCD 2005).

SDAPCD Rules and Regulations

As stated above, the SDAPCD is responsible for planning, implementing, and enforcing federal and state ambient standards in the SDAB. The following rules and regulations apply to all sources in the jurisdiction of SDAPCD, and would apply to the project:

- **SDAPCD Regulation II: Permits; Rule 20.2: New Source Review Non-Major Stationary Sources**. Requires new or modified stationary source units (that are not major stationary sources) with the potential to emit 10 pounds per day or more of VOC, NO_x, sulfur oxides (SO_x), or PM_{10} to be equipped with BACT. For those units with a potential to emit above Air Quality Impact Assessments Trigger Levels, the units must demonstrate that such emissions would not violate or interfere with the attainment of any national air quality standard (SDAPCD 1998).

  The Proposed Project does not propose specific stationary sources. If stationary sources were to be included as part of the Proposed Project, or at a later date, those sources would be subject to Rule 20.2 and would require appropriate operating permits from the SDAPCD. Because the SDAPCD has not adopted specific criteria air pollutant thresholds for analyses under the California Environmental Quality Act (CEQA), the thresholds identified in Rule 20.2 are used in this analysis as screening-level thresholds to evaluate project-level impacts, as discussed in Section 3.1.

- **SDAPCD Regulation IV: Prohibitions; Rule 50: Visible Emissions.** Prohibits discharge into the atmosphere from any single source of emissions whatsoever any air contaminant for a period or periods aggregating more than 3 minutes in any period of 60 consecutive minutes that is darker in shade than that designated as Number 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or of such opacity as to obscure an observer's view to a degree greater than does smoke of a shade designated as Number 1 on the Ringelmann Chart (SDAPCD 1997).
- **SDAPCD Regulation IV: Prohibitions; Rule 51: Nuisance.** Prohibits the discharge, from any source, of such quantities of air contaminants or other materials that cause or have a tendency to cause injury, detriment, nuisance, annoyance to people and/or the public, or damage to any business or property (SDAPCD 1969).

- **SDAPCD Regulation IV: Prohibitions; Rule 55: Fugitive Dust.** Regulates fugitive dust emissions from any commercial construction or demolition activity capable of generating fugitive dust emissions, including active operations, open storage piles, and inactive disturbed areas, as well as track-out and carry-out onto paved roads beyond a project Site (SDAPCD 2009).
- **SDAPCD Regulation IV: Prohibitions; Rule 67.0.1: Architectural Coatings.** Requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories (SDAPCD 2015a).

- **SDAPCD Regulation XII: Toxic Air Contaminates; Rule 1200: Toxic Air Contaminants - New Source Review**. Requires new or modified stationary source units with the potential to emit TACs above rule threshold levels to either demonstrate that they will not increase the maximum incremental cancer risk above 1 in 1 million at every receptor location, or demonstrate that toxics best available control technology (T-BACT) will be employed if maximum incremental cancer risk is equal to or less than 10 in 1 million, or demonstrate compliance with SDAPCD's protocol for those sources with an increase in maximum incremental cancer risk at any receptor location of greater than 10 in 1 million but less than 100 in 1 million (SDAPCD 2017b).

  The Proposed Project does not propose specific stationary sources that would generate TACs that are not commonly associated with residential development projects. If stationary sources with the potential to emit TACs were to be included as part of the Proposed Project, or at a later date, those sources would be subject to SDAPCD Rule 1200, and would be subject to New Source Review requirements.

- **SDAPCD Regulation XII: Toxic Air Contaminates; Rule 1210: Toxic Air Contaminant Public Health Risks – Public Notification and Risk Reduction**. Requires each stationary source that is required to prepare a public risk assessment to provide written public notice of risks at or above the following levels: maximum incremental cancer risks equal to or greater than 10 in 1 million, or cancer burden equal to or greater than 1.0, or total acute noncancer health hazard index equal to or greater than 1.0, or total chronic noncancer health hazard index equal to or greater than 1.0 (SDAPCD 2017c).

  The Proposed Project does not propose specific stationary sources that would generate TACs. If stationary sources with the potential to emit TACs were to be included as part of the Proposed Project, or at a later date, those sources would be subject to SDAPCD Rule 1210, and would be subject to Public Notification and Risk Reduction requirements. The thresholds identified in Rule 1210 are used in this analysis as thresholds for the health risk assessment, which are consistent with the SDAPCD health risk assessment guidelines (SDAPCD 2015b).

2.2.3.2 San Diego Association of Governments

SANDAG is the regional planning agency for San Diego County and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. SANDAG serves as the federally designated metropolitan planning organization (MPO) for San Diego County. With respect to air quality planning and other regional issues, SANDAG has prepared *San Diego Forward: The Regional Plan* (Regional Plan) for the San Diego region (SANDAG 2015). The Regional Plan combines the big-picture vision for how our region will grow over the next 35 years with an implementation program to help make that vision a reality. The Regional Plan, including its Sustainable Communities Strategy (SCS), is built on an integrated set of public policies, strategies, and investments to maintain, manage, and improve the transportation system so that it meets the diverse needs of the San Diego region through 2050.

In regard to air quality, the Regional Plan sets the policy context in which SANDAG participates in and responds to SDAPCD's air quality plans and builds off the air district's air quality plan processes that are designed to meet health-based criteria pollutant standards in several ways (SANDAG 2015). First, it complements air quality plans by providing guidance and incentives for public agencies to consider best practices that support the technology-based control measures in air quality plans. Second, the Regional Plan emphasizes the need for better coordination of land use and transportation planning, which heavily influences the emissions inventory from the transportation sectors of the economy. This also minimizes land use conflicts, such as residential development near freeways, industrial areas, or other sources of air pollution.

On September 23, 2016, SANDAG's Board of Directors adopted the final *2016 Regional Transportation Improvement Program*. It is a multi-billion dollar, multi-year program of projects for major transportation projects in the San Diego region. Transportation projects supported through federal, state, and TransNet (the San Diego transportation sales tax program) funds must be included in an approved Regional Transportation Improvement Program. The programming of locally funded projects also may be programmed at the discretion of the agency. The 2016 Regional Transportation Improvement Program covers five fiscal years and incrementally implements the Regional Plan (SANDAG 2016).

2.2.3.3 City of Del Mar

The City of Del Mar General Plan includes policies related to improving air quality (both directly and indirectly) (City of Del Mar 1985). Applicable policies include the following:

Transportation Element

Goal 2. Objective F. Work to reduce transportation related sources of water pollution, particularly in storm water runoff.

Policy 1: Seek to promote the reduction of vehicle-miles-traveled, thereby reducing congestion and reducing air and water pollution.

Policy 2: Recognize and publicize the relationship between air pollution and water pollution in the deposition onto streets and other surfaces of airborne contaminants, including metals and fine particulate matter (PM_{10}).

Environmental Management Element

Goal 1. Objective H.

Policy 12: Encourage reductions and modifications to air pollution generating activities and sources to reduce the deposition of air-borne pollutants and improve urban and stormwater runoff water quality.

2.3 Regional and Local Air Quality Conditions

2.3.1 San Diego Air Basin Attainment Designation

Pursuant to the 1990 federal Clean Air Act Amendments, the EPA classifies air basins (or portions thereof) as "attainment" or "nonattainment" for each criteria air pollutant, based on whether the NAAQS have been achieved. Generally, if the recorded concentrations of a pollutant are lower than the standard, the area is classified as "attainment" for that pollutant. If an area exceeds the standard, the area is classified as "nonattainment" for that pollutant. As previously discussed, these standards are set by the EPA or CARB for the maximum level of a given air pollutant that can exist in the outdoor air without unacceptable effects on human health or the public welfare. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated as "unclassified" or "unclassifiable." The designation of "unclassifiable/attainment" means that the area meets the standard or is expected to be meet the standard despite a lack of monitoring data. Areas that achieve the standards after a nonattainment designation are redesignated as maintenance areas and must have approved Maintenance Plans to ensure continued attainment of the standards. The California Clean Air Act, like its federal counterpart, called for the designation of areas as "attainment" or "nonattainment," but based on CAAQS rather than the NAAQS. Table 2 summarizes the SDAB's federal and state attainment designations for each of the criteria pollutants.

Table 2
San Diego Air Basin Attainment Classification

Pollutant	National Designation	California Designation
O_3 (1-hour)	Attainment[a]	**Nonattainment**
O_3 (8-hour – 1997) (8-hour – 2008)	Attainment (Maintenance) **Nonattainment (Moderate)**	**Nonattainment**

Table 2
San Diego Air Basin Attainment Classification

Pollutant	National Designation	California Designation
NO_2	Unclassifiable/Attainment	Attainment
CO	Attainment (Maintenance)	Attainment
SO_2	Unclassifiable/Attainment	Attainment
PM_{10}	Unclassifiable/Attainment	**Nonattainment**
$PM_{2.5}$	Unclassifiable/Attainment	**Nonattainment**
Lead	Unclassifiable/Attainment	Attainment
Sulfates	No federal standard	Attainment
Hydrogen sulfide	No federal standard	Unclassified
Visibility-reducing particles	No federal standard	Unclassified
Vinyl chloride	No federal standard	No designation

Sources: EPA 2018b (National); CARB 2018 (California).
Notes:
Bold text = not in attainment; Attainment = meets the standards; Attainment (Maintenance) = achieves the standards after a nonattainment designation; Nonattainment = does not meet the standards; Unclassified or Unclassifiable = insufficient data to classify; Unclassifiable/Attainment = meets the standard or is expected to meet the standard despite a lack of monitoring data.
[a] The federal 1-hour standard of 0.12 parts per million was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in SIPs.

In summary, the SDAB is designated as a nonattainment area for national and California O_3 standards and state PM_{10} and $PM_{2.5}$ standards. The SDAB is designated as a nonattainment area for state PM_{10} and $PM_{2.5}$ standards; however, it is designated as an attainment area for federal PM_{10} and $PM_{2.5}$ standards. The SDAB is designated as an attainment area for national and California CO standards, national and California NO_2 standards, national and California SO_2 standards, and national and California lead standards.

2.3.2 Local Ambient Air Quality

CARB, air districts, and other agencies monitor ambient air quality at approximately 250 air quality monitoring stations across the state. The project site's local ambient air quality is monitored by the SDAPCD. As stated previously, an ambient air quality standard defines the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without harm to the public's health. Air quality monitoring stations usually measure pollutant concentrations 10 feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. The most recent background ambient air quality data from 2016 to 2018 are presented in Table 3. The Del Mar–Mira Costa College monitoring station, located at 832 Camino Del Mar, is the nearest air quality monitoring station to the project site, located approximately 1.11 miles south of the project site. The data collected at this station are considered representative of the air quality experienced in the project site. Air quality data for O_3 from the Del Mar–Mira Costa College monitoring station is provided in Table 3. Because NO_2, CO, SO_2, PM_{10}, and $PM_{2.5}$ are not monitored at the Del Mar–Mira Costa College monitoring station, NO_2, PM_{10}, and $PM_{2.5}$ measurements were taken from the San Diego–Kearny Villa

Road monitoring station; CO measurements were taken from the Rancho Carmel Drive monitoring station; and SO_2 measurements were taken from the El Cajon–Floyd Smith Drive monitoring station.

California air districts have based their thresholds of significance for CEQA purposes on the levels that scientific and factual data demonstrate that the air basin can accommodate without affecting the attainment date for the NAAQS or CAAQS. Since an ambient air quality standard is based on maximum pollutant levels in outdoor air that would not harm the public's health, and air district thresholds pertain to attainment of the ambient air quality standard, this means that the thresholds established by air districts are also protective of human health.

Table 3
Local Ambient Air Quality Data

Concentration or Exceedances	Ambient Air Quality Standard	2016	2017	2018
Ozone (O_3) – Del Mar–Mira Costa College Monitoring Station				
Maximum 1-hour concentration (ppm)	0.09 ppm (state)	0.079	0.075	ND
Number of days exceeding state standard		*1*	*1*	ND
Maximum 8-hour concentration (ppm)	0.070 ppm (state)	0.071	0.061	ND
	0.070 ppm (federal)	0.071	0.061	ND
Number of days exceeding state standard		*2*	*1*	*ND*
Number of days exceeding federal standard		*2*	*1*	*ND*
Nitrogen Dioxide (NO_2) – San Diego–Kearny Villa Road Monitoring Station Monitoring Station				
Maximum 1-hour concentration (ppm)	0.18 ppm (state)	0.053	0.054	0.045
	0.100 ppm (federal)	0.053	0.054	0.045
Number of days exceeding state standard		*0*	*0*	*0*
Number of days exceeding federal standard		*0*	*0*	*0*
Annual concentration (ppm)	0.030 ppm (state)	0.009	0.009	0.008
	0.053 ppm (federal)	—	—	—
Carbon Monoxide (CO) –11403 Rancho Carmel Drive				
Maximum 1-hour concentration (ppm)	20 ppm (state)	—	—	—
	35 ppm (federal)	2.0	1.5	1.9
Number of days exceeding state standard		—	—	—
Number of days exceeding federal standard		*0*	*0*	*0*
Maximum 8-hour concentration (ppm)	9.0 ppm (state)	—	—	—
	9 ppm (federal)	1.2	1.4	1.1
Number of days exceeding state standard		—	—	—
Number of days exceeding federal standard		*0*	*0*	*0*
Sulfur Dioxide (SO_2) – El Cajon–Floyd Smith Drive Monitoring Station				
Maximum 1-hour concentration (ppm)	0.075 ppm (federal)	0.006	0.011	0.035
Number of days exceeding federal standard		*0*	*0*	*0*
Maximum 24-hour concentration (ppm)	0.14 ppm (federal)	0.002	0.004	0.004
Number of days exceeding federal standard		*0*	*0*	*0*
Annual concentration (ppm)	0.030 ppm (federal)	0.001	0.001	0.001

Table 3
Local Ambient Air Quality Data

Concentration or Exceedances	Ambient Air Quality Standard	2016	2017	2018
Coarse Particulate Matter (PM_{10}) – San Diego–Kearny Villa Road Monitoring Station				
Maximum 24-hour concentration (μg/m³)	50 μg/m³ (state)	35.0	47.0	38.0
	150 μg/m³ (federal)	36.0	46.0	38.0
Number of days exceeding state standard[a]		*ND (0)*	*0.0 (0)*	*0.0 (0)*
Number of days exceeding federal standard[a]		*0.0 (0)*	*0.0 (0)*	*0.0 (0)*
Annual concentration (state method) (μg/m³)	20 μg/m³ (state)	ND	17.6	18.4
Fine Particulate Matter ($PM_{2.5}$) – San Diego–Kearny Villa Road Monitoring Station				
Maximum 24-hour concentration (μg/m³)	35 μg/m³ (federal)	19.4	27.5	32.2
Number of days exceeding federal standard[a]		*0 (0)*	*0 (0)*	*0.0 (0)*
Annual concentration (μg/m³)	12 μg/m³ (state)	7.8	8.0	8.3
	12.0 μg/m³ (federal)	7.5	7.9	8.3

Sources: CARB 2019f; EPA 2019a.

Notes: — = not available; μg/m3 = micrograms per cubic meter; ND = insufficient data available to determine the value; ppm = parts per million
Data taken from CARB iADAM (http://www.arb.ca.gov/adam) and EPA AirData (http://www.epa.gov/airdata/) represent the highest concentrations experienced over a given year.
Exceedances of federal and state standards are only shown for O_3 and particulate matter. Daily exceedances for particulate matter are estimated days because PM_{10} and $PM_{2.5}$ are not monitored daily. All other criteria pollutants did not exceed federal or state standards during the years shown. There is no federal standard for 1-hour O_3, annual PM_{10}, or 24-hour SO_2, nor is there a state 24-hour standard for $PM_{2.5}$.
Del Mar-Mira Costa College Monitoring Station is located at 832 Camino Del Mar, Del Mar, California 92014.
San Diego–Kearny Villa Road Monitoring Station is located at 6125A Kearny Villa Road, San Diego, California 92145.
El Cajon–Floyd Smith Drive Monitoring Station is located at 10537 Floyd Smith Drive, El Cajon, California 92020.

[a] Measurements of PM_{10} and $PM_{2.5}$ are usually collected every 6 days and every 1 to 3 days, respectively. Number of days exceeding the standards is a mathematical estimate of the number of days concentrations would have been greater than the level of the standard had each day been monitored. The numbers in parentheses are the measured number of samples that exceeded the standard.

2.4 Significance Criteria and Methodology

2.4.1 Thresholds of Significance

The State of California has developed guidelines to address the significance of air quality impacts based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.), which provides guidance that a project would have a significant environmental impact if it would:

1. Conflict with or obstruct the implementation of the applicable air quality plan;
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for O_3 precursors);

4. Expose sensitive receptors to substantial pollutant concentrations; or
5. Create objectionable odors affecting a substantial number of people.

Appendix G of the CEQA Guidelines indicates that, where available, the significance criteria established by the applicable air quality management district or pollution control district may be relied upon to determine whether the project would have a significant impact on air quality.

The City has not adopted numerical thresholds of significant for determining whether air quality impacts are significant. As part of its air quality permitting process, the SDAPCD has established thresholds in Rule 20.2 requiring the preparation of Air Quality Impact Assessments for permitted stationary sources. The SDAPCD sets forth quantitative emission thresholds below which a stationary source would not have a significant impact on ambient air quality. Project-related air quality impacts estimated in this environmental analysis would be considered significant if any of the applicable significance thresholds presented in Table 4 are exceeded. For CEQA purposes, these screening criteria can be used as numeric methods to demonstrate that a project's total emissions would not result in a significant impact to air quality.

Table 4
San Diego Air Pollution Control District Air Quality Significance Thresholds

Construction Emissions			
Pollutant	*Total Emissions (Pounds per Day)*		
Respirable Particulate Matter (PM_{10})	100		
Fine Particulate Matter ($PM_{2.5}$)[1]	55		
Oxides of Nitrogen (NO_x)	250		
Oxides of Sulfur (SO_x)	250		
Carbon Monoxide (CO)	550		
Volatile Organic Compounds (VOC)[2]	137		
Operational Emissions			
Pollutant	*Total Emissions*		
	Pounds per Hour	*Pounds per Day*	*Tons per Year*
Respirable Particulate Matter (PM_{10})	—	100	15
Fine Particulate Matter ($PM_{2.5}$)[1]	—	55	10
Oxides of Nitrogen (NO_x)	25	250	40
Sulfur Oxides (SO_x)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	—	3.2	0.6
Operational Emissions			
Pollutant	*Total Emissions*		
	Pounds per Hour	*Pounds per Day*	*Tons per Year*
Volatile Organic Compounds (VOC)[2]	—	137	13.7

Source: SDAPCD Rule 20.2(d)(2) (SDAPCD 1998).

[1] $PM_{2.5}$ is not currently regulated under SDAPCD Rule 20.2. $PM_{2.5}$ thresholds are based on South Coast Air Quality Management District (SCAQMD) significance thresholds of 55 pounds per day for construction and operation and 10 tons per year for operation.

[2] VOC threshold based on the significance thresholds recommended by the Monterey Bay Air Resources District for the North Central Coast Air Basin, which has similar federal and state attainment status as the basin for O_3.

The evaluation whether the project would conflict with or obstruct implementation of the SDAPCD 2016 RAQS (threshold criterion 1) is based on the potential for the project to conflict with the underlying land use assumptions (i.e., general plan land use designations) in the RAQS.

The SDAPCD Air Quality Significance Thresholds shown in Table 4 were used to determine significance of project-generated criteria air pollutants; specifically, the project's potential to violate any air quality standard or contribute substantially to an existing or projected air quality violation (as assessed under the threshold criterion 2). The pounds per day threshold for construction and operational emissions are the same, which is applied in this analysis. The emissions-based thresholds for O_3 precursors are intended to serve as a surrogate for an "O_3 significance threshold" (i.e., the potential for adverse O_3 impacts to occur). This approach is used because O_3 is not emitted directly (see the discussion of O_3 and its sources in Section 2.1.2, Pollutants and Effects) and the effects of an individual project's emissions of O_3 precursors (VOC and NO_x) on O_3 levels in ambient air cannot be determined through air quality models or other quantitative methods. Emissions below the screening-level thresholds would not cause a significant impact.[4]

For nonattainment pollutants, if emissions exceed the thresholds shown in Table 4, the project could have the potential to result in a cumulatively considerable net increase in these pollutants and thus could have a significant impact on the ambient air quality (as assessed under the threshold criterion 3).

In regards to the analysis of potential impacts to sensitive receptors (threshold criterion 4), the City specifically recommends consideration of sensitive receptors in locations such as day care centers, schools, retirement homes, and hospitals, or medical patients in residential homes close to major roadways or stationary sources, which could be impacted by air pollutants.

SDAPCD Rule 51 (Public Nuisance) prohibits emission of any material that causes nuisance to a considerable number of persons or endangers the comfort, health, or safety of any person. Regarding threshold criterion 5, a project that proposes a use that would produce objectionable odors would be deemed to have a significant odor impact if it would affect a considerable number of off-site receptors.

[4] In the event that emissions of attainment pollutants exceed thresholds listed in Table 4, dispersion modeling could be conducted to demonstrate that the project's emissions of attainment pollutants, in combination with ground-level background concentrations, are below the CAAQS and NAAQS. If project-generated emissions of nonattainment pollutants exceed thresholds listed in Table 4, then the project would have a potentially significant impact in regards to the potential to violate any air quality standard or contribute substantially to an existing or projected air quality violation.

2.4.2 Approach and Methodology

2.4.2.1 Construction

Emissions from the construction phase of the project were estimated using California Emissions Estimator Model (CalEEMod) Version 2016.3.2. Construction scenario assumptions, including phasing, equipment mix, and vehicle trips, were based on information provided by the project applicant and CalEEMod default values when project specifics were not known.

For purposes of estimating project emissions, and based on information provided by the project applicant, it is assumed that construction of the project would commence in October 2020 and would last approximately 26 months, ending in November 2022. The analysis contained herein is based on the following assumptions (duration of phases is approximate):

- Site Preparation and Demolition: 1 month (October 2020 – November 2020)
- Grading and Pipeline Construction: 2 months (November 2020 – January 2021)
- Building Construction: 20 months (January 2021 – September 2022)
- Paving: 2 months (September 2022 – November 2022)
- Architectural Coatings: 18 months[5] (April 2021 – November 2022)

Installation of utilities was assumed to occur during the grading phase. In addition, installation of approximately 4,000 to 5,000 linear feet of a new pipeline would involve an open trench to be dug for the direct installation of pipeline, which would occur concurrent with the grading phase. The sequence of activities for open-trench pipeline construction would typically commence with trenching and excavation, followed by pipe installation and covering of the installed pipe, and concluding with paving the pipeline corridor area of disturbance. For the purposes of quantifying emissions from daily construction activity associated with pipeline construction, it was assumed that contractors would complete approximately 75 to 100 linear feet of pipeline installation could occur each day depending on the component under construction and total linear feet of pipeline or conveyance infrastructure to be constructed over a given period; however, daily activity and linear feet installed would vary depending on field conditions, site/easement access, and other factors associated with continual site location changes.[6]

Both the parking garage and the residential development would be painted during the architectural coating phase. The paving phase and the architectural coating phase end during the same month because the paving phase duration includes finalization of the project construction and exterior improvements.

[5] Architectural coating would occur intermittently during building construction and paving.
[6] Linear feet per day assumptions based on typical construction practices for pipeline construction, and review of related projects.

For the analysis, it was generally assumed that heavy construction equipment would be operating at the site for approximately 8 hours per day, 5 days per week (22 days per month), during project construction.

Construction worker estimates and vendor truck trips by construction phase were based on CalEEMod default values. Haul truck trips during the grading phase were based on project applicant-provided earthwork quantities. Grading is estimated to involve 43,000 cubic yards of soil for export. Assuming a haul truck capacity of 16 cubic yards per truck, earth-moving activities would result in approximately 2,688 round trips (5,376 one-way truck trips) during the grading phase. CalEEMod default trip length values were used for the distances for all construction-related trips.

The construction equipment mix and vehicle trips used for estimating the project-generated construction emissions are shown in Table 5.

Table 5
Construction Scenario Assumptions

Construction Phase	One-way Vehicle Trips			Equipment		
	Average Daily Worker Trips	*Average Daily Vendor Truck Trips*	*Total Haul Truck Trips*	*Equipment Type*	*Quantity*	*Usage Hours*
Site Preparation and Demolition	18	4	26	Rubber Tired Dozers	5	8
				Tractors/Loaders/Backhoes	4	8
				Concrete/Industrial Saws	1	8
				Excavators	3	8
Grading	20	4	5,376	Excavators	2	8
				Graders	1	8
				Rubber Tired Dozers	1	8
				Scrapers	2	8
				Tractors/Loaders/Backhoes	2	8
Pipeline Site Preparation	6	0	0	Concrete/Industrial Saws	1	8
Pipeline Installation and Backfill	4	2	0	Excavators	1	8
				Generator Sets	1	8
				Tractors/Loaders/Backhoes	1	8
Pipeline Paving	4	2	0	Graders	1	8
				Paving Equipment	1	8
				Rollers	1	8
Building Construction	174	50	0	Cranes	1	7
				Forklifts	3	8
				Generator Sets	1	8
				Tractors/Loaders/Backhoes	3	7
				Welders	1	8
Paving	16	4	0	Pavers	2	8
				Paving Equipment	2	8
				Rollers	2	8

Table 5
Construction Scenario Assumptions

Construction Phase	One-way Vehicle Trips			Equipment		
	Average Daily Worker Trips	*Average Daily Vendor Truck Trips*	*Total Haul Truck Trips*	*Equipment Type*	*Quantity*	*Usage Hours*
Architectural Coating	36	4	0	Air Compressors	1	6

Notes: See Appendix A for details.

2.4.2.2 Operation

Emissions from the operational phase of the project were estimated using CalEEMod Version 2016.3.2. Operational year 2023 was assumed, consistent with the construction schedule.

Area Sources

CalEEMod was used to estimate operational emissions from area sources, including emissions from consumer product use, architectural coatings, and landscape maintenance equipment. Emissions associated with natural gas usage in space heating, water heating, and stoves are calculated in the building energy use module of CalEEMod, as described in the following text. The project would include 176 natural gas fireplaces.[7]

Consumer products are chemically formulated products used by household and institutional consumers, including detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. Other paint products, furniture coatings, or architectural coatings are not considered consumer products (CAPCOA 2017). Consumer product VOC emissions are estimated in CalEEMod based on the floor area of residential and nonresidential buildings and on the default factor of pounds of VOC per building square foot per day. For parking lot land uses, CalEEMod estimates VOC emissions associated with use of parking surface degreasers based on a square footage of parking surface area and pounds of VOC per square foot per day.

VOC off-gassing emissions result from evaporation of solvents contained in surface coatings such as in paints and primers used during building maintenance. CalEEMod calculates the VOC evaporative emissions from application of residential and nonresidential surface coatings based on the VOC emission factor, the building square footage, the assumed fraction of surface area, and the reapplication rate. The project would use no or low VOC paint in construction and regular maintenance activities (Dudek 2018). Low VOC paint is generally considered to contain

[7] Each of the 146 dwelling units would have one natural gas fireplace. Additionally, 10 natural fire pits outdoors and up to 20 natural gas fireplaces in the hotel would be included in the project.

less than 50 grams of VOC per liter, however to provide a conservative analysis, a VOC content of 50 grams per liter was assumed for interior painting and a VOC content of 100 grams per liter was assumed for exterior painting.[8] Consistent with CalEEMod default values, a VOC content of 250 was assumed for the parking structures These assumptions were used in both the construction and operational phases as the resort operator will manage architectural coatings for construction and reapplication for maintenance purposes. The model default reapplication rate of 10% of area per year is assumed. Consistent with CalEEMod defaults, it is assumed that the residential surface area for painting equals 2.7 times the floor square footage, with 75% assumed for interior coating and 25% assumed for exterior surface coating. For nonresidential land uses (e.g., community and fitness rooms), it is assumed that the surface area for painting equals 2.0 times the floor square footage, with 75% assumed for interior coating and 25% assumed for exterior surface coating. For the parking garage, the architectural coating area is assumed to be 6% of the total square footage, consistent with the supporting CalEEMod studies provided as an appendix to the CalEEMod User's Guide (CAPCOA 2017).

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers. The emissions associated from landscape equipment use are estimated based on CalEEMod default values for emission factors (grams per residential dwelling unit per day and grams per square foot of nonresidential building space per day) and number of summer days (when landscape maintenance would generally be performed) and winter days (CAPCOA 2017). By design, the project would limit turf, and the proposed landscaped area would be minimal and any landscape equipment used is anticipated to be powered by electricity, when needed. Nonetheless, emissions associated with potential landscape maintenance equipment were included and no emission reduction features related to electric landscape equipment was assumed to conservatively capture potential project operational emission sources.

Energy Sources

As represented in CalEEMod, energy sources include emissions associated with building electricity and natural gas usage (non-hearth). Electricity use would contribute indirectly to criteria air pollutant emissions; however, the emissions from electricity use are only quantified for GHGs in CalEEMod, since criteria pollutant emissions occur at the site of the power plant, which is typically off site.

[8] Per the SDAPCD Rule 67.0.1, the VOC content limits for the three general coatings categories are 50 grams per liter VOC for flat coatings, 100 grams per liter VOC for non-flat coatings, and 150 grams per liter VOC for non-flat high-gloss coatings. While the project would use low VOC paint for interior and exterior application as a sustainability feature, assuming a maximum of 100 grams per liter VOC for exterior paint and finishes provides a conservative analysis in the event a small portion of exterior coatings, such as trim, would have a VOC greater than 50 grams per liter.

Project-specific energy demand for the structures and pools was estimated using the Energy Star Target Finder tool (Glumac 2019). As stated in PDF-AQ/GHG-2, the project would include installation of a total of 701-kilowatt in photovoltaic systems that would produce an estimated 45% of project-wide demand including project-wide water heating demand.

Mobile Sources

Mobile sources for the project would be motor vehicles (i.e., automobiles and light-duty trucks) traveling to and from the project site. Motor vehicles may be fueled with gasoline, diesel, or alternative fuels. Default vehicle trip generation rates included in CalEEMod for each of the analyzed land uses were adjusted to match the project's trip generation rates presented in the Transportation Impact Analysis prepared for the project by Linscott, Law & Greenspan (LLG) (LLG 2019)[9]. In addition, CalEEMod default trip distances were adjusted accordingly based on the weekday VMT of 10,967 miles and a Saturday and Sunday VMT of 12,833 miles. Therefore, it was assumed that each land use would result in a trip length of approximately 7.9 miles for the villa, single-family homes, affordable housing, and market rate hotel components and 7.6 miles for the hotel. CalEEMod default data, including emissions factors were conservatively used for the model inputs to estimate daily emissions from proposed vehicular sources. In accordance with PDF-AQ/GHG-4 (see Section 1.4, Project Design Features), a range of TDM measures including providing each employee would be offered a free monthly transit pass would be implemented to reduce VMT. To be conservative this analysis did not quantify the GHG emission reduction associated with the TDM program. Emission factors representing the vehicle mix and emissions for 2023 were used to estimate emissions associated with full build-out of the project. Trip rate assumptions for the project are shown in Table 6.

Table 6
Project Trip Rate Assumptions

Land Use	CalEEMod Land Use Surrogate	Revised Trip Rate		
		Weekday	*Saturday*	*Sunday*
Hotel	Hotel	8.00	10.50	10.50
Villa	Condo/Townhouse	8.00	8.14	8.14
Single Family Homes	Single Family Housing	12.00	12.00	12.00
Affordable Housing	Apartment Low Rise	6.00	8.14	8.14
Market Rate Hotel	Motel	6.00	8.14	8.14

Source: LLG 2019.

[9] The project would include 65 luxury hotel rooms, 10 low cost inn units, 81 villas, 4 work force housing units, and 22 affordable housing units. This would result in 75 hotel rooms and 107 dwelling units.

2.5 Impact Analysis

2.5.1 Would the project conflict with or obstruct implementation of the applicable air quality plan?

As stated in Section 2.3, Regionals and Local Air Quality Conditions, SDAPCD and SANDAG are responsible for developing and implementing the clean air plans for attainment and maintenance of the ambient air quality standards in the SDAB—specifically, the SIP and RAQS.[10] The federal O_3 maintenance plan was adopted in December 2016. The SIP includes a demonstration that current strategies and tactics will maintain acceptable air quality in the SDAB based on the NAAQS. The RAQS was initially adopted in 1991 and was most recently updated in 2016. The RAQS outlines SDAPCD's plans and control measures designed to attain the state air quality standards for O_3. The SIP and RAQS rely on information from CARB and SANDAG, including mobile and area source emissions as well as information regarding projected growth in San Diego County as a whole and the cities in the County, to project future emissions and determine the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by San Diego County and the cities in the County as part of the development of their general plans.

The RAQS also relies on information from CARB and SANDAG, vehicle trends, and land-use plans developed by the cities and by San Diego County as part of development of their general plans. As such, if a project would entail development that is greater than that anticipated in the local plan and SANDAG's growth projections, the project might be in conflict with the SIP and RAQS and may contribute to a potentially significant cumulative impact on air quality. The project site is zoned R1-14 (Modified Low Density) and R1-40 (Very Low Density). The City's 1985 Community Plan designates the project site as Public Parkland (City of Del Mar 1985). The project would re-designate the project site as Specific Plan, which includes 65 hotel guest rooms, 31 villas (some of which may be used as hotel guest rooms when not in use by owners, subject to provisions in the Specific Plan), 10 lower-cost shared visitor-serving accommodations, 22 affordable housing units, and associated amenities. Amenities include, but are not limited to, restaurants, bar/lounge, special event space, meeting space, swimming pools, a spa and fitness center, and retail. The project would change the designation of the project site from R1-14 (Modified Low Density) and R1-40 (Very Low Density) to Specific Plan, allowing for recreational and commercial uses.

[10] For the purpose of this discussion, the relevant federal air quality plan is the ozone maintenance plan (SDAPCD 2016b). The RAQS is the applicable plan for purposes of state air quality planning. Both plans reflect growth projections in the basin.

While the SDAPCD and the City do not provide guidance regarding the analysis of impacts associated with air quality plan conformance, the County's Guidelines for Determining Significance and Report and Format and Content Requirements – Air Quality does discuss conformance with the RAQS (County of San Diego 2007). The guidance indicates that if a project, in conjunction with other projects, contributes to growth projections that would not exceed SANDAG's growth projections for the City, the project would not be in conflict with the RAQS (County of San Diego 2007). As previously discussed, the project would change the designation of the project site in order to refine the land uses allowable for the project site.

The guidance also indicates that, in the event that a project changes the zoning designation, additional analysis may still provide substantial evidence that the growth is accounted for in the RAQS assumptions. To demonstrate conformance in this case, a growth projection analysis can be completed for the applicable Subregional Area (SRA) and/or Metropolitan Statistical Area by comparing the SANDAG growth projections with the actual development expected to occur. If the project, in conjunction with other projects, contributes to growth projections that would not exceed SANDAG's growth projections for that SRA or Metropolitan Statistical Area, the project would not be in conflict with the RAQS or SIP.

The project is located within SRA 13 – Del Mar-Mira Mesa, which includes the City in its entirety. SANDAG's population estimate for this SRA in 2012, when the most recent RAQS was adopted, was 160,668, and the forecasted population in 2020 (the closest year for which SANDAG has available data to a project buildout of 2023) is 195,024. Therefore, SANDAG's projections anticipated approximately 34,356 new residents in this SRA over an 8-year period (SANDAG 2013).

The addition of 199 new residents[11] to the SRA as a result of the project would be accommodated in the population forecast used to prepare the 2016 RAQS. While the project was not included in the underlying growth estimates for the SDAB used as the basis for the SIP and RAQS update, it would not conflict with or obstruct implementation of the SIP or RAQS because the SANDAG population projections for SRA 13 would accommodate more growth (34,356 new residents) than that associated with the project (199 residents). Because the growth forecasts and development assumptions upon which the SIP and RAQS are based would not be exceeded, the project would not conflict with or obstruct implementation of the applicable air quality plan and impacts would be **less than significant**.

[11] The household size of the villas was assumed to be 2.02 persons consistent with the average household size in the City of Del Mar. Each workforce housing unit was assumed to have one resident.

Mitigation Measures

None required.

Level of Significance After Mitigation

Impacts would be less than significant without mitigation.

2.5.2 Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Construction Emissions

Construction of the project would result in a temporary, short-term addition of pollutants to the local airshed caused by soil disturbance, fugitive dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials. Emissions resulting from construction of the project would be temporary because construction activities would occur intermittently over the construction phase of the project, and construction activities and associated emissions would cease following project build-out. Construction emissions can vary substantially from day to day depending on the level of activity, the specific type of operation, and, for dust, prevailing weather conditions. For the purposes of modeling, a worst-case maximum daily emission scenario for project construction activities is analyzed. Fugitive dust (i.e., PM_{10} and $PM_{2.5}$) emissions would primarily result from grading and site preparation activities. NO_x and CO emissions would primarily result from the use of construction equipment and motor vehicles. VOC emissions would primarily result from asphalt and architectural coating off-gassing.

Emissions from the construction phase of the project were estimated using CalEEMod. Construction of the project is anticipated to commence in October 2020, occurring over an approximately 26-month period. A detailed description of construction subphases as well as other assumptions made for the purposes of modeling is included in Appendix A of this report.

Construction subphases would overlap in some instances to meet the provided construction schedule. This overlap is accounted for in the construction emissions estimates. Construction of the project would involve approximately 43,000 cubic yards of soil export. A more detailed description of the construction schedule, including information regarding subphases and equipment used during each subphase, is included in Appendix A.

Construction worker and vendor trip assumptions were assigned to each construction subphase to determine criteria air pollutant emissions from these sources. Construction worker and vendor trips for construction were determined using CalEEMod default worker trip and vendor trip vehicle generation factors. The construction equipment mix was provided by the applicant and represents a reasonably

conservative estimate of construction activity. Where project-specific construction equipment information was not available, CalEEMod default equipment mixes were used. For the analysis, it was generally assumed that heavy construction equipment would be operating at the site for approximately 8 hours per day, 5 days per week (22 days per month) during project construction.

The project is subject to SDAPCD Rule 55: Fugitive Dust Control. This rule requires actions to restrict visible emissions of fugitive dust beyond the property line. Compliance with Rule 55 would limit fugitive dust (i.e., PM_{10} and $PM_{2.5}$) that may be generated during grading and construction activities. To account for dust control measures in the calculations, it was assumed that the active sites would be watered at least two times daily, resulting in an approximately 55% reduction of particulate matter. The project is also subject to SDAPCD Rule 67.0: Architectural Coatings. This rule establishes maximum VOC contents of 50 and 100 grams per liter for flat and non-flat coatings, respectively. CalEEMod default values of 250 grams per liter for residential and non-residential interior coatings and 250 grams per liter for residential and non-residential exterior coatings were replaced with VOC contents of 50 and 100 grams per liter.

Table 7 shows the estimated maximum daily construction emissions associated with the construction phases of the project. Complete details of the emissions calculations are provided in Appendix A.

Table 7
Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
2020	7.98	106.35	59.90	0.20	12.65	8.35
2021	9.30	87.75	45.80	0.17	15.03	6.09
2022	9.04	22.69	24.68	0.06	3.00	1.43
Maximum Daily Emissions	**9.30**	**106.35**	**59.90**	**0.20**	**15.03**	**8.35**
SDAPCD Threshold	*137*	*250*	*550*	*250*	*100*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: See Appendix A for detailed results.
Notes: The values shown are the maximum summer or winter daily emissions results from CalEEMod.
These estimates reflect control of fugitive dust required by San Diego Air Pollution Control District (SDAPCD) Rule 55 (water a minimum twice per day) and SDAPCD Rule 67, which limits VOC content of architectural coatings.
VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter

As shown in Table 7, daily construction emissions would not exceed SDAPCD's significance thresholds for any criteria air pollutant. Therefore, impacts would be **less than significant**.

Operational Emissions

The project involves development of 65 hotel guest rooms, 31 villas (some of which may be used as hotel guest rooms when not in use by owners, subject to provisions in the Specific Plan), 10 lower-cost shared visitor-serving accommodations, 22 affordable housing units, and associated amenities. Operation of the project would generate VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from mobile sources, including vehicle trips from future residents; area sources, including the use of consumer products, architectural coatings for repainting, and landscape maintenance equipment; and energy sources, including combustion of fuels used for space and water heating and cooking appliances. Operation, pollutant emissions associated with long-term operations were quantified using CalEEMod. Project-generated mobile source emissions were estimated in CalEEMod based on project-specific trip rates. CalEEMod default values were used to estimate emissions from the project area and energy sources.

Table 8 presents the maximum daily area, energy, and mobile source emissions associated with operation (year 2023) of the project. The values shown are the maximum summer or winter daily emissions results from CalEEMod. Details of the emission calculations are provided in Appendix A.

Table 8
Estimated Maximum Daily Operational Criteria Air Pollutant Emissions

Emission Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
Area Sources	8.92	3.02	10.09	0.02	0.29	0.29
Energy	0.52	4.59	2.69	0.03	0.36	0.36
Reduction from Solar Hot Water System[a]	(0.05)	(0.43)	(0.36)	0.00	(0.03)	(0.03)
Mobile	2.52	9.53	29.94	0.11	9.99	2.72
Total	11.91	16.71	42.36	0.16	10.61	3.34
Emission Threshold	*137*	*250*	*550*	*250*	*100*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: See Appendix A for detailed results.
Notes: The values shown are the maximum summer or winter daily emissions results from the California Emissions Estimator Model (CalEEMod). These estimates reflect compliance with SDAPCD Rule 67, which limits VOC content of architectural coatings, assumed no wood burning devices. VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter
[a] The project would generate 16,000 therms per year of for hot water demand. This would offset natural gas emissions. Refer to Appendix C.

As shown in Table 8, daily operational emissions would not exceed the significance thresholds for VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$. As such, the project's operational impacts on air quality would be **less than significant**.

Mitigation Measures

None required.

Level of Significance After Mitigation

Impacts would be less than significant without mitigation.

2.5.3 Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

In analyzing cumulative impacts from the project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the SDAB is designated as nonattainment for the CAAQS and NAAQS. If the project does not exceed thresholds and is determined to have less-than-significant project-specific impacts, it may still contribute to a significant cumulative impact on air quality if the emissions from the project, in combination with the emissions from other proposed or reasonably foreseeable future projects, are in excess of established thresholds. However, the project would only be considered to have a significant cumulative impact if the project's contribution accounts for a significant proportion of the cumulative total emissions (i.e., it represents a "cumulatively considerable contribution" to the cumulative air quality impact).

The SDAB has been designated as a federal nonattainment area for O_3 and a state nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. PM_{10} and $PM_{2.5}$ emissions associated with construction generally result in near-field impacts. The nonattainment status is the result of cumulative emissions from all sources of these air pollutants and their precursors within the SDAB. As discussed previously, the project-generated emissions of VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$ would be below the significance thresholds for both construction and operational activities. As such, the project would result in less than significant impacts to air quality relative to construction and operational emissions.

Based on the considerations described above, cumulative impacts would be **less than significant**.

Mitigation Measures

None required.

Level of Significance After Mitigation

Impacts would be less than significant without mitigation.

2.5.4 Would the project expose sensitive receptors to substantial pollutant concentrations?

Air quality varies as a direct function of the amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. Air quality problems arise when the rate of pollutant emissions exceeds the rate of dispersion. Reduced visibility, eye irritation, and adverse health impacts upon those persons termed "sensitive receptors" are the most serious hazards of existing air quality conditions in the area. Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. Sensitive receptors include residences, schools, playgrounds, child-care centers, athletic facilities, long-term health-care facilities, rehabilitation centers, convalescent centers, and retirement homes. The nearest existing sensitive receptors are located adjacent to the project site's northern boundary. Receptors also include visitors and residents of the project.

Health Impacts of Toxic Air Contaminants

In addition to impacts from criteria pollutants, project impacts may include emissions of pollutants identified by the state and federal government as TACs or HAPs. State law has established the framework for California's TAC identification and control program, which is generally more stringent than the federal program and aimed at TACs that are a problem in California. The state has formally identified more than 200 substances as TACs, including the federal HAPs, and is adopting appropriate control measures for sources of these TACs. The greatest potential for TAC emissions during construction would be diesel particulate emissions from heavy equipment operations and heavy-duty trucks and the associated health impacts to sensitive receptors. The following measures are required by state law to reduce DPM emissions:

- Fleet owners of mobile construction equipment are subject to the CARB Regulation for In-use Off-road Diesel Vehicles (13 CCR 2449), the purpose of which is to reduce DPM and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles.
- All commercial diesel vehicles are subject to Title 13, Section 2485 of the California Code of Regulations, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading shall be limited to five minutes; electric auxiliary power units should be used whenever possible.

Health effects from carcinogenic air toxics are usually described in terms of cancer risk. The SDAPCD recommends an incremental cancer risk threshold of 10 in a million (SDAPCD 2015b). "Incremental cancer risk" is the net increased likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 9-, 30-, and 70-year exposure period will contract cancer based on the use of standard Office of Environmental Health Hazard Assessment risk-assessment methodology. The project would not require the extensive operation of heavy-

duty construction equipment, which is subject to a CARB Airborne Toxics Control Measure for in-use diesel construction equipment to reduce diesel particulate emissions and would not involve extensive use of diesel trucks, which are also subject to a CARB Airborne Toxics Control Measure.

As shown in Table 6, maximum daily particulate matter (i.e., PM_{10} or $PM_{2.5}$) emissions generated by construction equipment operation and haul-truck trips during construction (exhaust particulate matter, or DPM), combined with fugitive dust generated by equipment operation and vehicle travel, would be well below the SDAPCD significance thresholds. Moreover, total construction of the project would last approximately 24 months, after which project-related TAC emissions would cease. Thus, the project would not result in a long-term source of TAC emissions. No residual TAC emissions and corresponding cancer risk are anticipated after construction, and no long-term sources of TAC emissions are anticipated during operation of the project. Therefore, the exposure of project-related TAC emission impacts to sensitive receptors would be **less than significant**.

Additionally, CARB has published the *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB 2005), which identifies certain types of facilities or sources that may emit substantial quantities of TACs and therefore could conflict with sensitive land uses, such as "schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities." The *Air Quality and Land Use Handbook* is a guide for siting of new sensitive land uses, but it does not mandate specific separation distances to avoid potential health impacts. The enumerated facilities or sources include the following:

- High-traffic freeways and roads
- Distribution centers
- Rail yards
- Ports
- Refineries
- Chrome plating facilities
- Dry cleaners
- Large gas dispensing facilities.

CARB recommends that sensitive receptors not be located downwind or in proximity to such sources to avoid potential health hazards.

The project would neither include any of the previously listed land uses nor expose visitors, residents, and employees of the project to TAC emissions from these sources. Impacts would be **less than significant**.

Health Impacts of Carbon Monoxide

Exposure to high concentrations of CO can result in dizziness, fatigue, chest pain, headaches, and impairment of central nervous system functions. Mobile-source impacts, including those related to CO, occur essentially on two scales of motion. Regionally, project-related construction travel would add to regional trip generation and increase the VMT within the local airshed and the SDAB. Locally, construction traffic would be added to the roadway system in the vicinity of the project site. Although the SDAB is currently an attainment area for CO, there is a potential for the formation of microscale CO "hotspots" to occur immediately around points of congested traffic. Hotspots can form if such traffic occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles cold-started and operating at pollution-inefficient speeds, and/or is operating on roadways already crowded with non-project traffic. Because of continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SDAB is steadily decreasing.

CO transport is extremely limited and CO disperses rapidly with distance from the source. Under certain extreme meteorological conditions, however, CO concentrations near a congested roadway or intersection may reach unhealthy levels, affecting sensitive receptors such as residents, schoolchildren, hospital patients, and the elderly. Typically, high CO concentrations are associated with urban roadways or intersections operating at an unacceptable level of service (LOS). Projects contributing to adverse traffic impacts may result in the formation of CO hotspots.

To verify that the project would not cause or contribute to a violation of the CO standards, a screening evaluation of the potential for CO hotspots was conducted. The California Department of Transportation (Caltrans) and the University of California, Davis, Institute of Transportation Studies *Transportation Project-Level Carbon Monoxide Protocol* (Caltrans 2010) were followed. CO hotspots are typically evaluated when (1) the LOS of an intersection or roadway decreases to LOS E or worse, (2) signalization and/or channelization is added to an intersection, and (3) sensitive receptors such as residences, schools, and hospitals are located in the vicinity of the affected intersection or roadway segment.

The Transportation Impact Analysis prepared for the project (LLG 2019) analyzed Existing, Near-Term, and Horizon Year 2035 conditions at 19 intersections near the project site. The results of the LOS assessment show that under Horizon Year 2035, 5 of the 19 study intersections are forecasted to operate at unacceptable LOS (LOS E or worse) during the peak hours. As shown in Appendix B, the five key study intersections according to the criteria above are

- Hwy 101 (Border Ave)/Via De La Valle (LOS B in AM and E in PM);
- Via De La Valle/S. Cedros Ave (LOS F in AM and F in PM);

- Via De La Valle/Jimmy Durante Blvd (LOS E in AM and E in PM);
- Camino Del Mar/27th Ave (LOS C in AM and E in PM);
- Camino Del Mar/Coast St (LOS C in AM and F in PM);

The remaining key intersections currently operate at an acceptable LOS during the AM and PM peak hours.

For Horizon Year 2035, the peak-hour intersection volumes were compared to the San Diego County peak-hour volume screening thresholds of 3,000 peak-hour trips for project-related impacts and 2,000 peak-hour trips for cumulatively considerable impacts (County of San Diego 2007). Three intersections were found to exceed the screening level thresholds; (1) Hwy 101 (Border Ave)/Via De La Valle (Camino Del Mar) (LOS E in PM); (2) Via De La Valle/S. Cedros Ave (LOS F in AM and PM); (3) Via De La Valle/Jimmy Durante Blvd (LOS E in AM and PM). All three intersections were evaluated in the Horizon scenario for CO hotspots. For each intersection, the highest volume (AM or PM) was used in the analysis as the worst-case scenario. The potential impact of the project on local CO levels was assessed at these intersections with the Caltrans CL4 interface based on the California LINE Source Dispersion Model (CALINE4), which allows microscale CO concentrations to be estimated along each roadway corridor or near intersections (Caltrans 1998a).

The emissions factor represents the weighted average emissions rate of the local San Diego County vehicle fleet expressed in grams per mile per vehicle. Consistent with the traffic scenario, emissions factors for 2035 were used for the three intersections. Emissions factors were predicted by EMFAC2014 based on a 5-mile-per-hour average speed for all of the intersections for approach and departure segments. The hourly traffic volume anticipated to travel on each link, in units of vehicles per hour, was based on information provided by the traffic consultant and modeling assumptions are outlined in Appendix B.

Four receptor locations were modeled at each intersection to determine CO ambient concentrations. A receptor was assumed on the sidewalk at each corner of the modeled intersections, to represent the future possibility of extended outdoor exposure. CO concentrations were modeled at these locations to assess the maximum potential CO exposure that could occur in and 2035. Since the cumulative traffic volumes in 2035 would be greater than 2023, if no impact is found in 2035, it can be assumed there would also be no near-term impact. A receptor height of 5.9 feet (1.8 meters) was used in accordance with Caltrans recommendations for all receptor locations (Caltrans 1998b).

The SCAQMD guidance recommends using the highest 1-hour measurement in the last 3 years as the projected future 1-hour CO background concentration for the analysis. A CO concentration of 2.0 parts per million by volume (ppm) was recorded in 2016 for the 11403 Rancho Carmel Drive monitoring station in San Diego and was assumed in the CALINE4 model for 2035. Data from 2015

was chosen as reflected the highest background concentration of the three most recent years for which data is available. To estimate an 8-hour average CO concentration, a persistence factor of 0.70, as calculated based on SCAQMD guidance (SCAQMD 1993), was applied to the output values of predicted concentrations in ppm at each of the receptor locations.

The results of the model are shown in Table 9. Model input and output data are provided in Appendix B.

Table 9
CALINE4 Predicted Carbon Monoxide Concentrations

Intersection	Maximum Modeled Impact (ppm)	
	1-hour	*8-hour*[a]
Hwy 101 (Border Ave)/Via De La Valle (Camino Del Mar)	2.8	2.0
Via De La Valle/S. Cedros Ave	2.7	1.9
Via De La Valle/Jimmy Durante Blvd	2.8	2.0

Source: Caltrans 1998a (CALINE4).
Notes: ppm = parts per million by volume.
[a] 8-hour concentrations were obtained by multiplying the 1-hour concentration by a persistence factor of 0.70 (SCAQMD 1993).

As shown in Table 9, the maximum CO concentration predicted for the 1-hour averaging period at the studied intersections would be 2.8 ppm, which is below the 1-hour CO CAAQS of 20 ppm (CARB 2016). The maximum predicted 8-hour CO concentration of 2.0 ppm at the studied intersections would be below the 8-hour CO CAAQS of 9.0 ppm (CARB 2016). Neither the 1-hour nor 8-hour CAAQS would be equaled or exceeded at any of the intersections studied. Accordingly, the project would not cause or contribute to violations of the CAAQS and would not result in exposure of sensitive receptors to localized high concentrations of CO. As such, impacts to sensitive receptors with regard to potential CO hotspots resulting from project contribution to cumulative traffic-related air quality impacts would be **less than significant**.

Health Impacts of Other Criteria Air Pollutants

Table 10 presents a list of the criteria pollutants and other related pollutants of concern, emission sources, associated health effects, and current SDAB attainment status.

Table 10
Pollutants, Sources, Health Effects, and Attainment Status

Pollutant	Sources	Health Effects	Attainment Status	
			NAAQS	*CAAQS*
O_3	Formed when VOCs and NO_x react in the presence of sunlight. VOC sources include any source that burns fuels (e.g., gasoline, natural gas, wood, oil); solvents; petroleum processing and storage.	Breathing difficulties, lung tissue damage, vegetation damage, damage to rubber and some plastics.	Attainment	Nonattainment
PM_{10}	Road dust, windblown dust, agriculture and construction, fireplaces. Also formed from other pollutants (NO_x, SO_x, organics). Incomplete combustion.	Increases respiratory disease, lung damage, cancer, premature death, reduced visibility, surface soiling.	Unclassifiable	Nonattainment
$PM_{2.5}$	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning. Also formed from reaction of other pollutants (e.g., NO_x, SO_x, organics, and NH_3).	Increases respiratory disease, lung damage, cancer, and premature death, reduced visibility, surface soiling. Particles can aggravate heart diseases such as congestive heart failure and coronary artery disease.	Attainment	Nonattainment
CO	Any source that burns fuel such as automobiles, trucks, heavy construction and farming equipment, residential heating.	Chest pain in heart patients, headaches, reduced mental alertness.	Attainment	Attainment
NO_2	See CO.	Lung irritation and damage. Reacts in the atmosphere to form O_3 and acid rain.	Unclassifiable/ Attainment	Attainment
Lead	Metal smelters, resource recovery, leaded gasoline, deterioration of lead paint.	Learning disabilities, brain and kidney damage.	Attainment	Attainment
SO_2	Coal or oil burning power plants and industries, refineries, diesel engines.	Increases lung disease and breathing problems for asthmatics. Reacts in the atmosphere to form acid rain.	Attainment	Attainment
Sulfates	Produced by reaction in the air of SO_2, (see SO_2 sources), a component of acid rain.	Breathing difficulties, aggravates asthma, reduced visibility.	(no federal standard)	Attainment
Hydrogen Sulfide	Geothermal power plants, petroleum production and refining, sewer gas.	Nuisance odor (rotten egg smell), headache and breathing difficulties (at higher concentrations).	(no federal standard)	Unclassified

Table 10
Pollutants, Sources, Health Effects, and Attainment Status

Pollutant	Sources	Health Effects	Attainment Status	
			NAAQS	*CAAQS*
Visibility Reducing Particles	See $PM_{2.5}$.	Reduced visibility (e.g., obscures mountains and other scenery), reduced airport safety.	(no federal standard)	Unclassified
Vinyl Chloride	Exhaust gases from factories that manufacture or process vinyl chloride (e.g., construction, packaging, and transportation industries)	Central nervous system effects (e.g., dizziness, drowsiness, headaches), kidney irritation, liver damage, liver cancer.	N/A	N/A
TAC	Combustion engines (stationary and mobile), diesel combustion, storage and use of TAC-containing substances (e.g., gasoline, lead smelting, etc.)	Depends on TAC, but may include cancer, mutagenic and/or teratogenic effects, other acute or chronic health effects.	N/A	N/A

Source: County of San Diego 2007.
O_3 = ozone; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; CO = carbon monoxide; NH_3 = ammonia; NO_2 = nitrogen dioxide; NO_x = nitrous oxide; SO_2 = sulfur dioxide; SO_x = sulfur oxide; TAC = toxic air contaminant; VOC = volatile organic compound.

As indicated in Tables 7 and 8, construction and operation of the project would not result in emissions that exceed the SDAPCD's emission thresholds for any criteria air pollutants. Some VOCs would be associated with motor vehicles and construction equipment, while others would be associated with architectural coatings, the emissions of which would not result in the exceedances of the SDAPCD's thresholds. Generally, the VOCs in architectural coatings are of relatively low toxicity. Additionally, SDAPCD Rule 67.0.1 restricts the VOC content of coatings for both construction and operational applications.

In addition, VOCs and NO_x are precursors to O_3, for which the SDAB is designated as nonattainment with respect to the NAAQS and CAAQS. (The SDAB is designated by the U.S. Environmental Protection Agency as an attainment area for the 1-hour O_3 NAAQS standard and 1997 8-hour NAAQS standard.) The health effects associated with O_3 are generally associated with reduced lung function. The contribution of VOCs and NO_x to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the SDAB due to O_3 precursor emissions tend to be found downwind from the source location to allow time for the photochemical reactions to occur. However, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the VOC emissions would occur because exceedances of the O_3 ambient air quality standards tend to occur between April and October when solar radiation is highest. The overall effect of a single project's emissions of O_3 precursors is speculative due to the lack of reliable methods to meaningfully assess this impact. Nonetheless, the VOC and NO_x emissions associated with project construction could minimally contribute to regional O_3

concentrations and the associated health impacts. Due to the minimal contribution during construction and operation, as well as the existing good air quality in coastal San Diego areas, health impacts would be considered **less than significant**.

Similar to O_3, construction of the project would not exceed thresholds for PM_{10} or $PM_{2.5}$ and would not contribute to exceedances of the NAAQS and CAAQS for particulate matter. The project would also not result in substantial diesel particulate matter emissions during construction and operation, and therefore, would not result in significant health effects related to diesel particulate matter exposure. The project would be required to comply with SDAPCD Rule 55, which limits the amount of fugitive dust generated during construction. Due to the minimal contribution of particulate matter during construction and operation, health impacts would be considered **less than significant**.

Regarding NO_2, according to the construction emissions analysis, construction of the proposed project would not contribute to exceedances of the NAAQS and CAAQS for NO_2. NO_2 (which is a constituent of NO_x) health impacts are associated with respiratory irritation, which may be experienced by nearby receptors during the periods of heaviest use of off-road construction equipment. However, these operations would be relatively short term and off-road construction equipment would be operating at various portions of the site and would not be concentrated in one portion of the site at any one time. Construction of the project would not require any stationary emission sources that would create substantial, localized NO_2 impacts. Therefore, health impacts would be considered **less than significant**.

The VOC and NO_x emissions, as described previously, would minimally contribute to regional O_3 concentrations and the associated health effects. In addition to O_3, NO_x emissions would not contribute to potential exceedances of the NAAQS and CAAQS for NO_2. CO tends to be a localized impact associated with congested intersections. The associated CO "hotspots" were discussed previously as a less-than-significant impact. Thus, the proposed project's CO emissions would not contribute to significant health effects associated with this pollutant. PM_{10} and $PM_{2.5}$ would not contribute to potential exceedances of the NAAQS and CAAQS for particulate matter, would not obstruct the SDAB from coming into attainment for these pollutants, and would not contribute to significant health effects associated with particulates. Therefore, health impacts associated with criteria air pollutants would be considered **less than significant**.

Mitigation Measures

None required.

Level of Significance After Mitigation

Impacts would be less than significant without mitigation.

2.5.5 Would the project create objectionable odors affecting a substantial number of people?

Odors would be generated from vehicles and/or equipment exhaust emissions during construction of the project. Odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment and architectural coatings. Such odors are temporary and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would be considered **less than significant**.

Land uses and industrial operations associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The project involves residential and recreational uses and would not result in the creation of a land use that is commonly associated with odors. Therefore, project operations would result in an odor impact that is **less than significant**.

Mitigation Measures

None required.

Level of Significance After Mitigation

Impacts would be less than significant without mitigation.

3 GREENHOUSE GAS EMISSIONS

3.1 Environmental Setting

3.1.1 Climate Change Overview

Climate change refers to any significant change in measures of climate—such as temperature, precipitation, or wind patterns—lasting for an extended period of time (decades or longer). The Earth's temperature depends on the balance between energy entering and leaving the planet's system. Many factors, both natural and human, can cause changes in Earth's energy balance, including variations in the sun's energy reaching Earth, changes in the reflectivity of Earth's atmosphere and surface, and changes in the greenhouse effect, which affects the amount of heat retained by Earth's atmosphere (EPA 2017a).

The greenhouse effect is the trapping and build-up of heat in the atmosphere (troposphere) near the Earth's surface. The greenhouse effect traps heat in the troposphere through a threefold process as follows: Short-wave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long-wave radiation; and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and toward the Earth. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature and creates a pleasant, livable environment on the Earth. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise.

The scientific record of the Earth's climate shows that the climate system varies naturally over a wide range of time scales and that in general, climate changes prior to the Industrial Revolution in the 1700s can be explained by natural causes, such as changes in solar energy, volcanic eruptions, and natural changes in GHG concentrations. Recent climate changes, in particular the warming observed over the past century, however, cannot be explained by natural causes alone. Rather, it is extremely likely that human activities have been the dominant cause of warming since the mid-twentieth century and is the most significant driver of observed climate change (IPCC 2014; EPA 2017a). Human influence on the climate system is evident from the increasing GHG concentrations in the atmosphere, positive radiative forcing, observed warming, and improved understanding of the climate system (IPCC 2013). The atmospheric concentrations of GHGs have increased to levels unprecedented in the last 800,000 years, primarily from fossil fuel emissions and secondarily from emissions associated with land use changes (IPCC 2013). Continued emissions of GHGs will cause further warming and changes in all components of the climate system, which is discussed further in Section 3.3.3, Potential Effects of Climate Change.

3.1.2 Greenhouse Gases

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code Section 38505(g) for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride . (See also CEQA Guidelines section 15364.5.)[12] Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted into the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Manufactured GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases (i.e., HFCs, PFCs, and SF_6), which are associated with certain industrial products and processes. The following paragraphs provide a summary of the most common GHGs and their sources.[13]

Carbon Dioxide. CO_2 is a naturally occurring gas and a by-product of human activities. It is the principal anthropogenic GHG that affects the Earth's radiative balance. Natural sources of CO_2 include respiration of bacteria, plants, animals, and fungus; evaporation from oceans; volcanic out-gassing; and decomposition of dead organic matter. Human activities that generate CO_2 include changes in land use and the combustion of fuels such as coal, oil, natural gas, and wood.

Methane. CH_4 is produced through both natural and human activities. CH_4 is a flammable gas and is the main component of natural gas. Sources of CH_4 include anaerobic (without oxygen) decomposition of waste in landfills, flooded rice fields, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

Nitrous Oxide. N_2O is produced through natural and human activities, mainly through agricultural activities and natural biological processes, although fuel burning and other processes also create N_2O. Sources of N_2O include soil cultivation practices (microbial processes in soil and water), especially the use of commercial and organic fertilizers, manure management, industrial processes (e.g., nitric acid production, nylon production, and fossil-fuel-fired power plants), vehicle emissions, and using N_2O as a propellant (e.g., in rockets, racecars, and aerosol sprays).

Fluorinated Gases. Fluorinated gases (also referred to as F-gases) are synthetic powerful GHGs emitted from many industrial processes. Fluorinated gases are commonly used as substitutes for

[12] Climate forcing substances include GHGs and other substances such as black carbon and aerosols. This discussion focuses on the seven GHGs identified in the California Health and Safety Code 38505 as impacts associated with other climate forcing substances are not evaluated herein.

[13] The descriptions of GHGs are summarized from the Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report (1995), IPCC Fourth Assessment Report (2007), CARB's "Glossary of Terms Used in GHG Inventories" (2015a), and EPA's "Glossary of Climate Change Terms" (2016b).

stratospheric ozone-depleting substances (e.g., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). The most prevalent fluorinated gases include the following:

- **Hydrofluorocarbons:** HFCs are compounds containing only hydrogen, fluorine, and carbon atoms. HFCs are synthetic chemicals used as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are used in manufacturing.
- **Perfluorocarbons:** PFCs are a group of human-made chemicals composed of carbon and fluorine only. These chemicals were introduced as alternatives, with HFCs, to ozone-depleting substances. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing. Since PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere, these chemicals have long lifetimes, ranging between 10,000 and 50,000 years.
- **Sulfur Hexafluoride:** SF_6 is a colorless gas that is soluble in alcohol and ether and slightly soluble in water. SF_6 is used for insulation in electric power transmission and distribution equipment, semiconductor manufacturing, the magnesium industry, and as a tracer gas for leak detection.
- **Nitrogen Trifluoride:** Nitrogen trifluoride is used in the manufacture of a variety of electronics, including semiconductors and flat panel displays.

3.1.3 Global Warming Potential

Gases in the atmosphere can contribute to climate change both directly and indirectly. Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other GHGs, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., affect cloud formation or albedo) (EPA 2016).

IPCC developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram of a trace substance relative to that of 1 kilogram of a reference gas (IPCC 2014). The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons (MT) of CO_2 equivalent (MT CO_2e).

The CalEEMod Version 2016.3.2 used in this analysis assumes that the GWP for CH4 is 25 (so emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), and the GWP for N_2O is 298, based on the IPCC Fourth Assessment Report (IPCC 2007). The GWP values identified in CalEEMod were applied to the project.

3.2 Regulatory Setting

3.2.1 Federal Regulations

Massachusetts v. EPA. In *Massachusetts v. EPA* (April 2007), the U.S. Supreme Court directed the EPA administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In December 2009, the administrator signed a final rule with the following two distinct findings regarding GHGs under Section 202(a) of the federal Clean Air Act:

- The Administrator found that elevated concentrations of GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations. This is the "endangerment finding."
- The Administrator further found the combined emissions of GHGs—CO_2, CH_4, N_2O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

Energy Independence and Security Act of 2007. The Energy Independence and Security Act of 2007 (December 2007), among other key measures, would do the following, which would aid in the reduction of national GHG emissions (EPA 2007):

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2023.
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020. Directs National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products, and procedures for new or amended standards, energy conservation, energy-efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

Federal Vehicle Standards. In response to the U.S. Supreme Court ruling discussed above, the Bush Administration issued EO 13432 in 2007 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA

issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011; in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, President Barack Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO_2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021. On January 12, 2017, the EPA finalized its decision to maintain the current greenhouse GHG emissions standards for model years 2022–2025 cars and light trucks (EPA 2017b).

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6%–23% over the 2010 baselines.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (EPA and NHTSA 2016).

In August 2018, EPA and NHTSA proposed to amend certain fuel economy and GHG standards for passenger cars and light trucks and establish new standards for model years 2021 through 2026. Compared to maintaining the post-2020 standards now in place, the 2018 proposal would increase U.S. fuel consumption by about half a million barrels per day (2–3 % of total daily consumption, according to the Energy Information Administration) and would impact the global climate by 3/1000th of one degree Celsius by 2100 (EPA and NHTSA 2018). California and other states have stated their intent to challenge federal actions that would delay or eliminate GHG reduction measures and have committed to cooperating with other countries to implement global climate change initiatives. Thus, the timing and consequences of the 2018 federal proposal are speculative at this time.

Clean Power Plan and New Source Performance Standards for Electric Generating Units. On October 23, 2015, EPA published a final rule (effective December 22, 2015) establishing the Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (80 FR 64510–64660), also known as the Clean Power Plan. These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO_2 emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: (1) fossil-fuel-fired electric utility steam-generating units, and (2) stationary combustion turbines. Concurrently, the EPA published a final rule (effective October 23, 2015) establishing Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units (80 FR 64661–65120). The rule prescribes CO_2 emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. The U.S. Supreme Court stayed implementation of the Clean Power Plan pending resolution of several lawsuits.

3.2.2 State Regulations

The statewide GHG emissions regulatory framework is summarized below by category: state climate change targets; building energy, renewable energy and energy procurement; mobile sources; solid waste; water; and other state regulations and goals. The following text describes EOs, assembly bills (ABs), SBs, and other regulations and plans that would directly or indirectly reduce GHG emissions.

State Climate Change Targets

The state has taken a number of actions to address climate change. These include EOs, legislation, and CARB plans and requirements. These are summarized below.

EO S-3-05. EO S-3-05 (June 2005) established California's GHG emissions reduction targets and laid out responsibilities among the state agencies for implementing the EO and for reporting on progress toward the targets. This EO established the following targets:

- By 2010, reduce GHG emissions to 2000 levels
- By 2020, reduce GHG emissions to 1990 levels
- By 2050, reduce GHG emissions to 80% below 1990 levels

EO S-3-05 also directed the California Environmental Protection Agency to report biannually on progress made toward meeting the GHG targets and the impacts to California due to global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry. The Climate Action Team (CAT) was formed, which subsequently issued reports from 2006 to 2010 (CAT 2016).

AB 32. In furtherance of the goals established in EO S-3-05, the Legislature enacted AB 32 (Núñez and Pavley). The bill is referred to as the California Global Warming Solutions Act of 2006 (September 27, 2006). AB 32 provided initial direction on creating a comprehensive multiyear program to limit California's GHG emissions at 1990 levels by 2020 and initiate the transformations required to achieve the state's long-range climate objectives.

SB 32 and AB 197. SB 32 and AB 197 (enacted in 2016) are companion bills. SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40% below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, in order to provide ongoing oversight over implementation of the state's climate policies. AB 197 also added two members of the Legislature to the Board as nonvoting members; requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and TACs from reporting facilities; and, requires CARB to identify specific information for GHG emissions reduction measures when updating the scoping plan.

CARB's 2007 Statewide Limit. In 2007, in accordance with California Health and Safety Code, Section 38550, CARB approved a statewide limit on the GHG emissions level for year 2020 consistent with the determined 1990 baseline (427 MMT CO_2e).

CARB's Climate Change Scoping Plan. One specific requirement of AB 32 is for CARB to prepare a "scoping plan" for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020 (Health and Safety Code, Section 38561(a)), and to update the plan at least once every 5 years. In 2008, CARB approved the first scoping plan. The *Climate Change Scoping Plan: A Framework for Change* (Scoping Plan) included a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the state's long-range climate objectives. The key elements of the Scoping Plan include the following (CARB 2008):

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards
2. Achieving a statewide renewable energy mix of 33%
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions
4. Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets

5. Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard (17 CCR 95480 et seq.)
6. Creating targeted fees, including a public goods charge on water use, fees on high-GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation

The Scoping Plan also identified local governments as essential partners in achieving California's goals to reduce GHG emissions because they have broad influence and, in some cases, exclusive authority over activities that contribute to significant direct and indirect GHG emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations. Specifically, the Scoping Plan encouraged local governments to adopt a reduction goal for municipal operations and for community emissions to reduce GHGs by approximately 15% from then levels (2008) by 2020. Many local governments developed community-scale local GHG reduction plans based on this Scoping Plan recommendation.

In 2014, CARB approved the first update to the Scoping Plan. The *First Update to the Climate Change Scoping Plan: Building on the Framework* (First Update) defined the state's GHG emission reduction priorities for the next 5 years and laid the groundwork to start the transition to the post-2020 goals set forth in EOs S-3-05 and B-16-2012. The First Update concluded that California is on track to meet the 2020 target but recommended a 2030 mid-term GHG reduction target be established to ensure a continuum of action to reduce emissions. The First Update recommended a mix of technologies in key economic sectors to reduce emissions through 2050 including: energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies. As part of the First Update, CARB recalculated the state's 1990 emissions level, using more recent global warming potentials identified by the IPCC, from 427 MMT CO_2e to 431 MMT CO_2e (CARB 2014).

In 2015, as directed by EO B-30-15, CARB began working on an update to the Scoping Plan to incorporate the 2030 target of 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050 as set forth in S-3-05. The Governor called on California to pursue a new and ambitious set of strategies, in line with the five climate change pillars from his inaugural address, to reduce GHG emissions and prepare for the unavoidable impacts of climate change. In the summer of 2016, the Legislature affirmed the importance of addressing climate change through passage of SB 32 (Pavley, Chapter 249, Statutes of 2016).

In December 2017, CARB adopted the *2017 Climate Change Scoping Plan Update* (2030 Scoping Plan) (CARB 2017c). The 2030 Scoping Plan builds on the successful framework established in

the initial Scoping Plan and First Update, while identifying new, technologically feasible, and cost-effective strategies that will serve as the framework to achieve the 2030 GHG target and define the state's climate change priorities to 2030 and beyond. The strategies' "known commitments" include implementing renewable energy and energy efficiency (including the mandates of SB 350), increased stringency of the Low Carbon Fuel Standard, measures identified in the Mobile Source and Freight Strategies, measures identified in the proposed Short-Lived Climate Pollutant Plan, and increased stringency of SB 375 targets. To fill the gap in additional reductions needed to achieve the 2030 target, it recommends continuing the Cap-and-Trade Program and a measure to reduce GHGs from refineries by 20%.

For local governments, the 2030 Scoping Plan replaced the initial Scoping Plan's 15% reduction goal with a recommendation to aim for a community-wide goal of no more than 6 MT CO_2e per capita by 2030 and no more than 2 MT CO_2e per capita by 2050, which are consistent with the state's long-term goals. These goals are also consistent with the Global Climate Leadership Memorandum of Understanding (Under 2 MOU) and the Paris Agreement, which are developed around the scientifically based levels necessary to limit global warming below two degrees Celsius. The 2030 Scoping Plan recognized the benefits of local government GHG planning (e.g., through climate action plans (CAPs)) and provide more information regarding tools CARB is working on to support those efforts. It also recognizes the CEQA streamlining provisions for project level review where there is a legally adequate CAP.[14]

The 2030 Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32, SB 32, and EO S-3-05, and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. A project is considered consistent with the statutes and EOs if it meets the general policies in reducing GHG emissions in order to facilitate the achievement of the state's goals and does not impede attainment of those goals. As discussed in several cases, a given project need not be in perfect conformity with every planning policy or goal to be consistent. Rather, a project would be consistent if it furthers the objectives and does not obstruct their attainment.

CARB's Regulations for the Mandatory Reporting of Greenhouse Gas Emissions. CARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (17 CCR 95100–95157) incorporated by reference certain requirements that EPA promulgated in its Final Rule on Mandatory Reporting of Greenhouse Gases (Title 40, Code of Federal Regulations, Part 98). Specifically, Section 95100(c) of the Mandatory Reporting Regulation incorporated those requirements that EPA promulgated in the Federal Register on October 30, 2009; July 12, 2010; September 22, 2010; October

[14] *Sierra Club v. County of Napa* (2004) 121 Cal.App.4th 1490; *San Francisco Tomorrow et al. v. City and County of San Francisco* (2015) 229 Cal.App.4th 498; *San Franciscans Upholding the Downtown Specific Plan v. City & County of San Francisco* (2002) 102 Cal.App.4th 656; *Sequoyah Hills Homeowners Assn. V. City of Oakland* (1993) 23 Cal.App.4th 704, 719.

28, 2010; November 30, 2010; December 17, 2010; and April 25, 2011. In general, entities subject to the Mandatory Reporting Regulation that emit over 10,000 MT CO_2e per year are required to report annual GHGs through the California Electronic GHG Reporting Tool. Certain sectors, such as refineries and cement plants, are required to report regardless of emission levels. Entities that emit more than the 25,000 MT CO_2e per year threshold are required to have their GHG emission report verified by a CARB-accredited third-party verifier.

EO B-18-12. EO B-18-12 (April 2012) directed state agencies, departments, and other entities under the governor's executive authority to take action to reduce entity-wide GHG emissions by at least 10% by 2015 and 20% by 2020, as measured against a 2010 baseline. EO B-18-12 also established goals for existing state buildings for reducing grid-based energy purchases and water use.

EO B-30-15. EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under S-3-05 and AB 32. EO B-30-15 set an interim target goal of reducing GHG emissions to 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050 as set forth in S-3-05. To facilitate achieving this goal, EO B-30-15 called for CARB to update the 2014 Scoping Plan to express the 2030 target in terms of MMT CO_2e. The EO also called for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets.

SB 605 and SB 1383. SB 605 (2014) requires CARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants (SLCPs) in the state; and SB 1383 (2016) requires CARB to approve and implement that strategy by January 1, 2018. SB 1383 also establishes specific targets for the reduction of SLCPs (40% below 2013 levels by 2030 for CH_4 and HFCs, and 50% below 2013 levels by 2030 for anthropogenic black carbon), and provides direction for reductions from dairy and livestock operations and landfills. Accordingly, and as mentioned above, CARB adopted its *Short-Lived Climate Pollutant Reduction Strategy* (SLCP Reduction Strategy) in March 2017. The SLCP Reduction Strategy establishes a framework for the statewide reduction of emissions of black carbon, methane and fluorinated gases (CARB 2017c).

EO B-55-18. EO B-55-18 (September 2018) establishes a statewide policy for the state to achieve carbon neutrality as soon as possible (no later than 2045), and achieve and maintain net negative emissions thereafter. The goal is an addition to the existing statewide targets of reducing the state's GHG emissions. CARB will work with relevant state agencies to ensure that future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal.

Building Energy

Title 24, Part 6. Title 24 of the California Code of Regulations was established in 1978, and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically established Building Energy Efficiency Standards that are designed to ensure that new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. These energy efficiency standards are reviewed every few years by the Building Standards Commission and the California Energy Commission (CEC), and revised if necessary (Pub. Resources Code, § 25402(b)(1)). The regulations receive input from members of industry, as well as the public, in order to "reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy" (Pub. Resources Code, § 25402). These regulations are carefully scrutinized and analyzed for technological and economic feasibility (Pub. Resources Code, § 25402(d)) and cost effectiveness (Pub. Resources Code, §§ 25402(b)(2–3)). As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment. The current Title 24 standards are the 2016 Title 24 building energy efficiency standards, which became effective January 1, 2017. The 2019 Title 24 building energy standards become effective January 1, 2020.

Title 24, Part 11. In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CALGreen, and establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential and state-owned buildings and schools, and hospitals. The CALGreen 2016 standards became effective January 1, 2017. The mandatory standards require the following (24 CCR Part 11):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance
- 65% of construction and demolition waste must be diverted from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency

- Inclusion of electric vehicle charging stations or designated spaces capable of supporting future charging stations
- Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards

The CALGreen standards also include voluntary efficiency measures that are provided at two separate tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15% improvement in energy requirements, stricter water conservation, 65% diversion of construction and demolition waste, 10% recycled content in building materials, 20% permeable paving, 20% cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30% improvement in energy requirements, stricter water conservation, 80% diversion of construction and demolition waste, 15% recycled content in building materials, 30% permeable paving, 25% cement reduction, and cool/solar-reflective roofs.

The California Building Standards Commission approved amendments to the voluntary measures of the CALGreen standards in December 2018. The 2019 CALGreen standards will become effective January 1, 2020. As with the 2019 Title 24 standards, the 2019 CALGreen standards focus on building energy efficiency.

Title 20. Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. The CEC certifies an appliance based on a manufacturer's demonstration that the appliance meets the standards. New appliances regulated under Title 20 include: refrigerators, refrigerator-freezers, and freezers; room air conditioners and room air-conditioning heat pumps; central air conditioners; spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwashers; clothes washers and dryers; cooking products; electric motors; low voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing each type of appliance covered under the regulations, and appliances must meet the standards for energy performance, energy design, water performance, and water design. Title 20 contains three types of standards for appliances: (1) federal and state standards for federally regulated appliances, (2) state standards for federally regulated appliances, and (3) state standards for non-federally regulated appliances.

SB 1. SB 1 (Murray) (August 2006) established a $3 billion rebate program to support the goal of the state to install rooftop solar energy systems with a generation capacity of 3,000 megawatts through 2016. SB 1 added sections to the Public Resources Code, including Chapter 8.8 (California Solar Initiative), that require building projects applying for ratepayer-funded incentives for photovoltaic systems to meet minimum energy efficiency levels and performance requirements. Section 25780 established that it is a goal of the state to establish a self-sufficient solar industry. The goals included establishing solar energy systems as a viable mainstream option for both homes

and businesses within 10 years of adoption, and placing solar energy systems on 50% of new homes within 13 years of adoption. SB 1, also termed "Go Solar California," was previously titled "Million Solar Roofs."

California AB 1470 (Solar Water Heating). This bill established the Solar Water Heating and Efficiency Act of 2007. The bill makes findings and declarations of the Legislature relating to the promotion of solar water heating systems and other technologies that reduce natural gas demand. The bill defines several terms for purposes of the act. The bill requires the CPUC to evaluate the data available from a specified pilot program, and, if it makes a specified determination, to design and implement a program of incentives for the installation of 200,000 solar water heating systems in homes and businesses throughout the state by 2017.

Renewable Energy and Energy Procurement

Senate Bill 1078. SB 1078 (Sher) (September 2002) established the Renewable Portfolio Standard program, which required an annual increase in renewable generation by the utilities equivalent to at least 1% of sales, with an aggregate goal of 20% by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20% of their power from renewable sources by 2010 (see SB 107, EO S-14-08, and S-21-09).

SB 1368. SB 1368 (September 2006), required the CEC to develop and adopt regulations for GHG emission performance standards for the long-term procurement of electricity by local publicly owned utilities. These standards must be consistent with the standards adopted by the CPUC.

AB 1109. Enacted in 2007, AB 1109 required the CEC to adopt minimum energy efficiency standards for general-purpose lighting, with the goal of reducing electricity consumption 50% for indoor residential lighting and 25% for indoor commercial lighting.

EO S-14-08. EO S-14-08 (November 2008) focused on the contribution of renewable energy sources to meet the electrical needs of California while reducing the GHG emissions from the electrical sector. This EO required that all retail suppliers of electricity in California serve 33% of their load with renewable energy by 2020. Furthermore, the EO directed state agencies to take appropriate actions to facilitate reaching this target. The CNRA (California Natural Resources Agency), through collaboration with the CEC and California Department of Fish and Wildlife (formerly the California Department of Fish and Game), was directed to lead this effort.

EO S-21-09 and SB X1-2. EO S-21-09 (September 2009) directed CARB to adopt a regulation consistent with the goal of EO S-14-08 by July 31, 2010. CARB was further directed to work with the CPUC and CEC to ensure that the regulation builds upon the Renewable Portfolio Standard program and was applicable to investor-owned utilities, publicly owned utilities, direct access providers, and community choice providers. Under this order, CARB was to give the highest

priority to those renewable resources that provide the greatest environmental benefits with the least environmental costs and impacts on public health and can be developed the most quickly in support of reliable, efficient, cost-effective electricity system operations. On September 23, 2010, CARB initially approved regulations to implement a Renewable Electricity Standard. However, this regulation was not finalized because of subsequent legislation (SB X1-2, Simitian, statutes of 2011) signed by Governor Brown in April 2011.

SB X1-2 expanded the Renewable Portfolio Standard by establishing a renewable energy target of 20% of the total electricity sold to retail customers in California per year by December 31, 2013, and 33% by December 31, 2020, and in subsequent years. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation (i.e., 30 megawatts or less), digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location.

SB X1-2 applies to all electricity retailers in the state including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. All of these entities must meet the renewable energy goals listed above.

SB 350. SB 350 (October 2015) further expanded the Renewable Portfolio Standard by establishing a goal of 50% of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 included the goal to double the energy efficiency savings in electricity and natural gas final end uses (e.g., heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal.

SB 100. SB 100 (2018) increased the standards set forth in SB 350, establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030, be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California. This bill requires that the achievement of 100% zero-carbon electricity resources do not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

Mobile Sources

AB 1493. AB 1493 (Pavley) (July 2002) was enacted in a response to the transportation sector accounting for more than half of California's CO_2 emissions. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the

state board to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22% in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30%.

Heavy Duty Diesel. CARB adopted the final Heavy Duty Truck and Bus Regulation, Title 13, Division 3, Chapter 1, Section 2025, on December 31, 2014 to reduce particulate matter and NO_x emissions from heavy-duty diesel vehicles. The rule requires particulate matter filters be applied to newer heavy-duty trucks and buses by January 1, 2012, with older vehicles required to comply by January 1, 2015. The rule will require nearly all diesel trucks and buses to be compliant with the 2010 model year engine requirement by January 1, 2023. CARB also adopted an Airborne Toxic Control Measure to limit idling of diesel-fueled commercial vehicles on December 12, 2013. This rule requires diesel-fueled vehicles with gross vehicle weights greater than 10,000 pounds to idle no more than 5 minutes at any location (13 CCR 2485).

EO S-1-07. EO S-1-07 (January 2007, implementing regulation adopted in April 2009) sets a declining Low Carbon Fuel Standard for GHG emissions measured in CO_2e grams per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020 (17 CCR 95480 et seq.). The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel—including extraction/feedstock production, processing, transportation, and final consumption—per unit of energy delivered.

SB 375. SB 375 (Steinberg) (September 2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 requires CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035 and to update those targets every 8 years. SB 375 requires the state's 18 regional MPOs to prepare a SCS as part of their Regional Transportation Plan (RTP) that will achieve the GHG reduction targets set by CARB. If an MPO is unable to devise an SCS to achieve the GHG reduction target, the MPO must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

Pursuant to Government Code, Section 65080(b)(2)(K), an SCS does not: (i) regulate the use of land; (ii) supersede the land use authority of cities and counties; or (iii) require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those

strategies as part of the federally required metropolitan transportation planning process and the state-mandated housing element process.

In 2010, CARB adopted the SB 375 targets for the regional MPOs. SANDAG has targets of a 7% reduction in emissions per capita by 2020, and a 13% reduction by 2035. SANDAG completed and adopted its *2050 Regional Transportation Plan/Sustainable Communities Strategy* (2050 RTP/SCS) in October 2011. In November 2011, CARB, by resolution, accepted SANDAG's GHG emissions quantification analysis and determination that, if implemented, the SCS would achieve CARB's 2020 and 2035 GHG emissions reduction targets for the region.

After SANDAG's 2050 RTP/SCS was adopted, a lawsuit was filed by the Cleveland National Forest Foundation and others. The case was resolved and decided upon in July 2017 by the California Supreme Court; the court found that SANDAG's environmental impact report did not have to use EO S-3-05's 2050 goal of an 80% reduction in GHG emissions from 1990 levels as a significance threshold because the environmental impact report sufficiently informed the public of the potential impacts. Although the environmental impact report for SANDAG's 2050 RTP/SCS was pending before the California Supreme Court, in 2015, SANDAG adopted the next iteration of its RTP/SCS in accordance with statutorily mandated timelines and no subsequent litigation challenge was filed. More specifically, in October 2015, SANDAG adopted *San Diego Forward: The Regional Plan*. Like the 2050 RTP/SCS, this planning document meets CARB's 2020 and 2035 reduction targets for the region (SANDAG 2015). In December 2015, CARB, by resolution, accepted SANDAG's GHG emissions quantification analysis and determination that, if implemented, the SCS would achieve CARB's 2020 and 2035 GHG emissions reduction targets for the region.

Advanced Clean Cars Program and Zero-Emissions Vehicle Program. The Advanced Clean Cars program (January 2012) is a new emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution and GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB 2011b). To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that in 2025, cars will emit 75% less smog-forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in conjunction with the EPA and the NHTSA, adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34% in 2025. The Zero Emission Vehicle program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of Zero Emission Vehicles and plug-in hybrid electric vehicles in the 2018 to 2025 model years.

EO B-16-12. EO B-16-12 (March 2012) required that state entities under the governor's direction and control support and facilitate the rapid commercialization of Zero Emission Vehicles. It ordered CARB, CEC, CPUC, and other relevant agencies to work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to help achieve established goals by 2015, 2020, and 2025. On a statewide basis, EO B-16-12 established a target reduction of GHG emissions from the transportation sector equaling 80% less than 1990 levels by 2050. This directive did not apply to vehicles that have special performance requirements necessary for the protection of the public safety and welfare.

AB 1236. AB 1236 (October 2015) (Chiu) required a city, county, or city and county to approve an application for the installation of electric vehicle charging stations, as defined, through the issuance of specified permits unless the city or county makes specified written findings based upon substantial evidence in the record that the proposed installation would have a specific, adverse impact upon the public health or safety, and there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact. The bill provided for appeal of that decision to the planning commission, as specified. The bill provided that the implementation of consistent statewide standards to achieve the timely and cost-effective installation of electric vehicle charging stations is a matter of statewide concern. The bill required electric vehicle charging stations to meet specified standards. The bill required a city, county, or city and county with a population of 200,000 or more residents to adopt an ordinance, by September 30, 2016, that created an expedited and streamlined permitting process for electric vehicle charging stations, as specified. The bill also required a city, county, or city and county with a population of less than 200,000 residents to adopt this ordinance by September 30, 2017.

Water

EO B-29-15. In response to the ongoing drought in California, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25% relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives have become permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources has modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increases the requirements for landscape water use efficiency and broadens its applicability to include new development projects with smaller landscape areas.

EO B-37-16. Issued May 2016, EO B-37-16 directs the State Water Resources Control Board (Water Board) to adjust emergency water conservation regulations through the end of January 2017 to reflect differing water supply conditions across the state. The Water Board must also develop a proposal to achieve a mandatory reduction of potable urban water usage that builds off

the mandatory 25% reduction called for in EO B-29-15. The Water Board and Department of Water Resources will develop new, permanent water use targets that build upon the existing state law requirements that the state achieve 20% reduction in urban water usage by 2020. EO B-37-16 also specifies that the Water Board will permanently prohibit water-wasting practices such as hosing off sidewalks, driveways, and other hardscapes; washing automobiles with hoses not equipped with a shut-off nozzle; using non-recirculated water in a fountain or other decorative water feature; watering lawns in a manner that causes runoff, or within 48 hours after measurable precipitation; and irrigating ornamental turf on public street medians.

EO B-40-17. EO B-40-17 (April 2017) lifted the drought emergency in all California counties except Fresno, Kings, Tulare, and Tuolumne. It also rescinds EO B-29-15, but expressly states that EO B-37-16 remains in effect and directs the Water Board to continue development of permanent prohibitions on wasteful water use.

Solid Waste

AB 939 and AB 341. In 1989, AB 939, known as the Integrated Waste Management Act (California Public Resources Code, Sections 40000 et seq.), was passed because of the increase in waste stream and the decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. AB 939 mandated a reduction of waste being disposed where jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25% by 1995 and 50% by the year 2000.

AB 341 (Chapter 476, Statutes of 2011 (Chesbro)) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75% of solid waste generated be source-reduced, recycled, or composted by the year 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal. CalRecycle conducted several general stakeholder workshops and several focused workshops; in August 2015, it published a discussion document titled AB 341 Report to the Legislature, which identifies five priority strategies that CalRecycle believes would assist the state in reaching the 75% goal by 2020, legislative and regulatory recommendations, and an evaluation of program effectiveness (CalRecycle 2017).

Other State Actions

SB 97. SB 97 (Dutton) (August 2007) directed the Governor's Office of Planning and Research to develop guidelines under CEQA for the mitigation of GHG emissions. In 2008, the Governor's Office of Planning and Research issued a technical advisory as interim guidance regarding the analysis of

GHG emissions in CEQA documents. The advisory indicated that the lead agency should identify and estimate a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities (OPR 2008). The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures necessary to reduce GHG emissions to a level that is less than significant. The CNRA adopted the CEQA Guidelines amendments in December 2009, which became effective in March 2010.

Under the amended Guidelines, a lead agency has the discretion to determine whether to use a quantitative or qualitative analysis or apply performance standards to determine the significance of GHG emissions resulting from a particular project (14 CCR 15064.4(a)). The Guidelines require a lead agency to consider the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)). The Guidelines also allow a lead agency to consider feasible means of mitigating the significant effects of GHG emissions, including reductions in emissions through the implementation of project features or off-site measures. The adopted amendments do not establish a GHG emission threshold, instead allowing a Lead Agency to develop, adopt, and apply its own thresholds of significance or those developed by other agencies or experts. The CNRA also acknowledges that a lead agency may consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions (CNRA 2009a).

With respect to GHG emissions, the CEQA Guidelines state in Section 15064.4(a) that lead agencies should "make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions. The CEQA Guidelines note that an agency may identify emissions by either selecting a "model or methodology" to quantify the emissions or by relying on "qualitative analysis or other performance based standards" (14 CCR 15064.4(a)). Section 15064.4(b) states that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment: (1) the extent a project may increase or reduce GHG emissions as compared to the existing environmental setting; (2) whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

EO S-13-08. EO S-13-08 (November 2008) is intended to hasten California's response to the impacts of global climate change, particularly sea-level rise. Therefore, the EO directs state agencies to take specified actions to assess and plan for such impacts. The final *2009 California Climate Adaptation Strategy* report was issued in December 2009 (CNRA 2009b), and an update, *Safeguarding California: Reducing Climate Risk*, followed in July 2014 (CNRA 2014). To assess the state's vulnerability, the report summarizes key climate change impacts to the state for the

following areas: Agriculture, Biodiversity and Habitat, Emergency Management, Energy, Forestry, Ocean and Coastal Ecosystems and Resources, Public Health, Transportation, and Water. Issuance of the *Safeguarding California: Implementation Action Plans* followed in March 2016 (CNRA 2016). In January 2018, the CNRA released the *Safeguarding California Plan: 2018 Update,* which communicates current and needed actions that state government should take to build climate change resiliency (CNRA 2018).

3.2.3 Local Regulations

3.2.3.1 San Diego Air Pollution Control District

SDAPCD does not have established GHG rules, regulations, or policies.

3.2.3.2 San Diego Association of Governments

On October 28, 2011, the SANDAG Board of Directors adopted the 2050 RTP/SCS, which articulates future plans for San Diego's regional transportation system over the next 40 years. The SCS, which is included as part of the RTP, details the regional strategy for reducing GHG emissions to state-mandated levels over time as required by SB 375, including measures encouraging infill development. The San Diego region is the first in California to produce an RTP with a SCS.

SANDAG prepared *San Diego Forward: The Regional Plan*, which has united two of SANDAG's major planning efforts into one with the next update of the RTP/SCS and an update of the Regional Comprehensive Plan that was adopted in 2004. The updated RTP/SCS was adopted by the SANDAG Board of Directors on October 9, 2015.

3.2.3.3 City of Del Mar

On June 6, 2016, the City adopted its CAP to reduce GHG emissions within the City in order to meet the State of California's goal as recommended in the AB 32 Scoping Plan of reducing GHG emissions to 1990 levels by 2020 (City of Del Mar 2016). It should be noted, however, that the City's CAP is not a certified GHG reduction plan and has not undergone CEQA review. The CAP states that it is an "aspirational document" and is not considered part of the City's General Plan or part of a regulatory program, therefore, information provided herein is provided for informational purposes. Reduction measures included in the CAP will undergo environmental review prior to implementation as necessary.

The CAP provides an update to the City's 2005 GHG inventory and provides GHG inventory projections for business-as-usual and "adjusted" 2020 and 2035, which includes reductions from federal and state regulatory measures. In 2012, the City's communitywide GHG

emissions totaled 55,855 MT CO_2e. In order to meet the state's long-term goal, the City would have to reduce its GHG emissions by 15% in 2020 to 47,477 MT CO_2e and 50% by 2035 to 27,928 MT CO_2e. As indicated in the CAP, the City's business-as-usual GHG emissions would be 54,822 MT CO_2e in 2020 and 55,314 MT CO_2e in 2035. With reductions, the City is projected to emit 46,028 MT CO_2e in 2020 and 43,048 MT CO_2e in 2035. Thus, the City would need to reduce 15,120 MT CO_2e emissions below the adjusted business-as-usual scenario in 2035 to meet the state-aligned target.

Reduction measures included in the CAP detail how the City can meet the GHG emissions target through implementation of goals, measures, and strategies. Each goal contains one or more proposed policies, programs, or projects indicating the City's commitment toward meeting the goal. The GHG reduction potential by 2020 and 2035 are identified for each goal. Goals are further divided into one or more discrete strategies that the City may take in achieving the goal. Strategies may be added or removed over time, depending on their relevancy, funding availability, and whether the strategies are successful in supporting measures as they are monitored over time. Each measure includes co-benefits that cover areas such as energy efficiency, water conservation, improved air quality, renewable energy and transportation.

3.3 Greenhouse Gas Inventories and Climate Change Conditions

3.3.1 Sources of Greenhouse Gas Emissions

Per the 2019 U.S. Environmental Protection Agency (EPA) Inventory of U.S. GHG Emissions and Sinks: 1990–2017, total U.S. GHG emissions were approximately 6,457 million metric tons (MMT) CO_2e in 2017 (EPA 2019b). The primary GHG emitted by human activities in the United States was CO_2, which represented approximately 81.6% of total GHG emissions (6,457 MMT CO_2e). The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 93.2% of CO_2 emissions in 2017 (4,912.0 MMT CO_2e). Relative to the 1990 emissions level, gross U.S. GHG emissions in 2017 are 1.3% higher; however, the gross emissions are down from a high of 15.7% above the 1990 level that occurred in 2007. GHG emissions decreased from 2016 to 2017 by 0.5% (35.5 MMT CO_2e) and, overall, net emissions in 2017 were 13% below 2005 levels (EPA 2019b).

According to California's 2000–2017 GHG emissions inventory (2019 edition), California emitted 424.09 MMT CO_2e in 2017, including emissions resulting from out-of-state electrical generation (CARB 2019g). The sources of GHG emissions in California include transportation, industrial uses, electric power production from both in-state and out-of-state sources, commercial and residential uses, agriculture, high global-warming potential substances, and recycling and waste. Table 11 presents California GHG emission source categories (as defined in CARB's 2008 Scoping Plan) and their relative contributions in 2017.

Table 11
Greenhouse Gas Emissions Sources in California

Source Category	Annual GHG Emissions (MMT CO_2e)	Percent of Total[a]
Transportation	169.86	40%
Industrial uses[b]	89.40	21%
Electricity generation	62.39	15%
Residential and commercial uses	41.14	10%
Agriculture	32.42	8%
High global-warming potential substances	19.99	5%
Recycling and waste	8.89	2%
Totals	**424.09**	**100%**

Source: CARB 2019g.
Notes: Emissions reflect the 2017 California GHG inventory.
MMT CO_2e = million metric tons of carbon dioxide equivalent per year
[a] Percentage of total has been rounded and total may not sum due to rounding.
[c] Includes emissions associated with imported electricity, which account for 23.94 MMT CO_2e.

Between 2000 and 2017, per capita GHG emissions in California have dropped from a peak of 14.1 MT per person in 2001 to 10.7 MT per person in 2017, representing a 24% decrease. In addition, total GHG emissions in 2017 were approximately 5 MMT CO_2e less than 2016 emissions. The declining trend in GHG emissions, coupled with programs that will continue to provide additional GHG reductions going forward, demonstrates that California will continue to reduce emissions below the 2020 target of 431 MT CO_2e (CARB 2019g).

In 2012, which was the baseline inventory year for the CAP, the city-wide GHG emissions were 55,855 MT CO_2e. The transportation sector accounted for 54% of emissions, which represents the majority of emissions. The Residential sector contributed approximately 21%, producing 11,518 MT CO_2e. The Commercial, Industrial, and Lighting Energy sector contributed about 15% of the City's emissions, producing 8,243 MTCO2e. Waste and Water sectors contributed 6% and 3% of emissions, respectively, and the remaining Wastewater sector accounted for less than 1% of total emissions (City of Del Mar 2016).

3.3.2 Carbon Sequestration

Carbon sequestration is the process by which CO_2 is removed from the atmosphere and deposited into a carbon reservoir (e.g., vegetation). Trees and vegetation take in CO_2 from the atmosphere during photosynthesis, break down the CO_2, store the carbon within plant parts, and release the oxygen back into the atmosphere (CARB 2015a). A development that changes land use type results in potential release of sequestered carbon to the atmosphere as CO_2, which would not have been released had there been no land-type change. The planting of new trees and vegetation would store new carbon as their wood mass increases via normal growth. This GHG analysis estimates the loss of sequestered carbon associated with the proposed land use change and the gain of sequestered carbon associated with planting new trees.

3.3.3 Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The IPCC's 2014 *Climate Change 2014: Synthesis Report* indicated that warming of the climate system is unequivocal and, since the 1950s, many of the observed changes are unprecedented over decades to millennia. Signs that global climate change has occurred include warming of the atmosphere and ocean, diminished amounts of snow and ice, and rising sea levels (IPCC 2014).

In California, climate change impacts have the potential to affect sea level rise, agriculture, snowpack and water supply, forestry, wildfire risk, public health, and electricity demand and supply (CCCC 2006). The primary effect of global climate change has been a 0.2°C rise in average global tropospheric temperature per decade, determined from meteorological measurements worldwide between 1990 and 2005. Scientific modeling predicts that continued emissions of GHGs at or above current rates would induce more extreme climate changes during the twenty-first century than were observed during the twentieth century. A warming of about 0.2°C (0.36°F) per decade is projected, and there are identifiable signs that global warming could be taking place.

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California. The average temperatures in California have increased, leading to more extreme hot days and fewer cold nights; shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt and rainwater running off earlier in the year; sea levels have risen; and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (CAT 2010).

An increase in annual average temperature is a reasonably foreseeable effect of climate change. Observed changes over the last several decades across the western United States reveal clear signals of climate change. Statewide average temperatures increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada (CCCC 2012). By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1°F to 8.6°F, depending on emissions levels. Springtime warming—a critical influence on snowmelt—will be particularly pronounced. Summer temperatures will rise more than winter temperatures, and the increases will be greater in inland California, compared to the coast. Heat waves will be more frequent, hotter, and longer. There will be fewer extremely cold nights (CCCC 2012). A decline of Sierra snowpack, which accounts for approximately half of the surface water storage in California and much of the state's water supply, by 30% to as much as 90% is predicted over the next 100 years (CAT 2006).

Model projections for precipitation over California continue to show the Mediterranean pattern of wet winters and dry summers with seasonal, year-to-year, and decade-to-decade variability. For the first time, however, several of the improved climate models shift toward drier conditions by the mid-to-late twenty-first century in Central and, most notably, Southern California. By late-century, all projections show drying, and half of them suggest 30-year average precipitation will decline by more than 10% below the historical average (CCCC 2012).

Wildfire risk in California will increase as a result of climate change. Earlier snowmelt, higher temperatures, and longer dry periods over a longer fire season will directly increase wildfire risk. Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning. However, human activities will continue to be the biggest factor in ignition risk. It is estimated that the long-term increase in fire occurrence associated with a higher emissions scenario is substantial, with increases in the number of large fires statewide ranging from 58% to 128% above historical levels by 2085. Under the same emissions scenario, estimated burned area will increase by 57% to 169%, depending on location (CCCC 2012).

Reduction in the suitability of agricultural lands in the state for traditional crop types may occur. While effects may occur, adaptation could allow farmers and ranchers to minimize potential negative effects on agricultural outcomes through adjusting timing of plantings or harvesting and changing crop types.

Public health-related effects of increased temperatures and prolonged temperature extremes—including heat stroke, heat exhaustion, and exacerbation of existing medical conditions—could be particular problems for the elderly, infants, and those who lack access to air conditioning or cooled spaces (CNRA 2009a).

A summary of current and future climate change impacts to resource areas in California, as discussed in CNRA's *Safeguarding California: Reducing Climate Risk* (CNRA 2014) is provided below.

Agriculture. The impacts of climate change on the agricultural sector are far more severe than the typical variability in weather and precipitation patterns that occur year to year. The agriculture sector and farmers face some specific challenges that include more drastic and unpredictable precipitation and weather patterns; extreme weather events that range from severe flooding to extreme drought, to destructive storm events; significant shifts in water availably and water quality; changes in pollinator lifecycles; temperature fluctuations, including extreme heat stress and decreased chill hours; increased risks from invasive species and weeds, agricultural pests and plant diseases; and disruptions to the transportation and energy infrastructure supporting agricultural production. These challenges and associated short-term and long-term impacts can have both positive and negative effects on agricultural production. Nonetheless, it is predicted that current crop and livestock production will suffer long-term negative effects resulting in a substantial decrease in the agricultural sector if not managed or mitigated.

Biodiversity and Habitat. The state's extensive biodiversity stems from its varied climate and assorted landscapes, which have resulted in numerous habitats where species have evolved and adapted over time. Specific climate change challenges to biodiversity and habitat include species migration in response to climatic changes, range shift, and novel combinations of species; pathogens, parasites, and disease; invasive species; extinction risks; changes in the timing of seasonal life-cycle events; food web disruptions; and threshold effects (i.e., a change in the ecosystem that results in a "tipping point" beyond which irreversible damage or loss occurs). Habitat restoration, conservation, and resource management across California and through collaborative efforts among public, private, and nonprofit agencies has assisted in the effort to fight climate change impacts on biodiversity and habitat. One of the key measures in these efforts is ensuring species' ability to relocate as temperature and water availability fluctuate due to climate change, based on geographic region.

Energy. The energy sector provides California residents with a supply of reliable and affordable energy through a complex integrated system. Specific climate change challenges for the energy sector include temperature, fluctuating precipitation patterns, increasing extreme weather events and sea-level rise. Increasing temperatures and reduced snowpack negatively impact the availability of a steady flow of snowmelt to hydroelectric reservoirs. Higher temperatures also reduce the capacity of thermal power plants because power plant cooling is less efficient at higher ambient temperatures. Increased temperatures will also increase electricity demand associated with air conditioning. Natural gas infrastructure in coastal California is threatened by sea-level rise and extreme storm events.

Forestry. Forests occupy approximately 33% of California's 100 million acres and provide key benefits such as wildlife habitat, absorption of carbon dioxide, renewable energy and building materials. The most significant risks to forests related to climate change is accelerated risk of wildfire and more frequent and severe droughts. Droughts have resulted in more large-scale mortalities and combined with increasing temperatures have led to an overall increase in wildfire risks. Increased wildfire intensity subsequently increases public safety risks, property damage, fire suppression and emergency response costs, watershed and water quality impacts and vegetation conversions. These factors contribute to decreased forest growth, geographic shifts in tree distribution, loss of fish and wildlife habitat, and decreased carbon absorption. Climate change may result in increased establishment of non-native species, particularly in rangelands where invasive species are already a problem. Invasive species may be able to exploit temperature or precipitation changes, or quickly occupy areas denuded by fire, insect mortality or other climate change effects on vegetation.

Ocean and Coastal Ecosystems and Resources. Sea-level rise, changing ocean conditions, and other climate change stressors are likely to exacerbate long-standing challenges related to ocean and coastal ecosystems, in addition to threatening people and infrastructure located along the

California coastline and in coastal communities. Sea level rise, in addition to more frequent and severe coastal storms and erosion, are threatening vital infrastructure such as roads, bridges, power plants, ports and airports, gasoline pipes, and emergency facilities. Coastal recreational assets, such as beaches and tidal wetlands, are also being negatively affected. Water quality and ocean acidification threaten the abundance of seafood and other plant and wildlife habitats throughout California and globally.

Public Health. Climate change can impact public health through various environmental changes and is the largest threat to human health in the twenty-first century. Changes in precipitation patterns affect public health primarily through potential for altered water supplies, as well as extreme events such as heat, floods, droughts, and wildfires. Increased frequency, intensity, and duration of extreme heat and heat waves is likely to increase the risk of mortality due to heat-related illness and exacerbation of existing chronic health conditions. Other extreme weather events are likely to negatively affect air quality and increase or intensify respiratory illness (e.g., asthma and allergies). Additional health impacts that may be impacted by climate change include cardiovascular disease, vector-borne diseases, mental health impacts, and malnutrition injuries. Increased frequency of these ailments is likely to subsequently increase the direct risk of injury and/or mortality.

Transportation. Residents of California rely on airports, seaports, public transportation, and an extensive roadway network to gain access to destinations, goods, and services. While the transportation industry is a source of GHG emissions, it is also vulnerable to climate change risks. Particularly, sea-level rise and erosion threaten many coastal California roadways, airports, seaports, transit systems, bridge supports, and energy and fueling infrastructure. Increasing temperatures and extended periods of extreme heat threaten the integrity of the roadways and rail lines. High temperatures cause the road surfaces to expand, which leads to increased pressure and pavement buckling. High temperatures can also cause rail breakages that could lead to train derailment. Other forms of extreme weather events, such as extreme storm events, can negatively impact infrastructure, which can impair movement of peoples and goods, or potentially block evacuation routes and emergency access roads. Increased wildfires, flooding, erosion risks, landslides, mudslides, and rockslides can all profoundly impact the transportation system and pose a serious risk to public safety.

Water. Water resources in California support residences, plants, wildlife, farmland, landscapes, and ecosystems, and bring trillions of dollars in economic activity. Climate change could seriously impact the timing, form, amount of precipitation, runoff patterns, and frequency and severity of precipitation events. Higher temperatures reduce the amount of snowpack and lead to earlier snowmelt, which can affect water supply availability, natural ecosystems, and winter recreation. Water supply availability during the intense dry summer months is heavily dependent on the snowpack accumulated during the winter. Increased risk of flooding is associated with a variety of public health concerns including water quality,

public safety, property damage, displacement, and post-disaster mental health problems. Prolonged and intensified droughts can also negatively affect groundwater reserves and result in increased overdraft and subsidence. Droughts can also negatively impact agriculture and farmland throughout the state. The higher risk of wildfires can lead to increased erosion, which can negatively impact watersheds and result in poor water quality. Water temperatures are also prone to increase, which can negatively affect wildlife that rely on a specific range of temperatures for suitable habitat.

In March 2016, CNRA released Safeguarding California: Implementation Action Plans, a document that shows how California is acting to convert the recommendations contained in the 2014 Safeguarding California plan into action (CNRA 2016). Additionally, in May 2017, CNRA released the draft Safeguarding California Plan: 2017 Update, which is a survey of current programmatic responses for climate change and contains recommendations for further actions (CNRA 2017).

CNRA released *Safeguarding California Plan: 2018 Update* in January 2018, which provides a roadmap for state agencies to protect communities, infrastructure, services, and the natural environment from climate change impacts. The 2018 Safeguarding California Plan includes 69 recommendations across 11 sectors and more than 1,000 ongoing actions and next steps developed by scientific and policy experts across 38 state agencies (CNRA 2018). As with previous state adaptation plans, the 2018 Update addresses the following: acceleration of warming across the state; more intense and frequent heat waves; greater riverine flows; accelerating sea level rise; more intense and frequent drought; more severe and frequent wildfires; more severe storms and extreme weather events; shrinking snowpack and less overall precipitation; and ocean acidification, hypoxia, and warming.

3.4 Significance Criteria and Methodology

3.4.1 Thresholds of Significance

The significance criteria used to evaluate the project's GHG emissions impacts are based on the recommendations provided in Appendix G of the CEQA Guidelines. For the purposes of this GHG emissions analysis, the project would have a significant environmental impact if it would (14 CCR 15000 et seq.):

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Neither the State of California nor SDAPCD has adopted emission-based thresholds of significance for GHG emissions under CEQA.

For purposes of GHG significance criterion 1 from Appendix G, the project's GHG emissions are assessed by evaluating the project's consistency with the City's CAP, as well as the project's potential to exceed a City-specific efficiency metric threshold (i.e., service population threshold) for 2023. The efficiency metric threshold developed for the purposes of this GHG emissions analysis is discussed below in detail.

For purposes of GHG significance criterion 2 from Appendix G, the project is assessed based on its potential to conflict with the City's CAP, SANDAG's Regional Plan, and CARB's Scoping Plan, including the Final 2030 Scoping Plan. The project's potential to conflict with the SANDAG Regional Plan and CARB's Scoping Plan goals and measures are analyzed as part of the consistency analysis.

City-Specific Efficiency Metric

The City's CAP is not a qualified CAP under CEQA Section 15183.5, and does not include project-level screening or significance threshold. The CAP does include community-wide emissions levels for the years 2020 and 2035 consistent with state goals, and therefore, an efficiency metric can be calculated to interpolate a per service population per year GHG levels consistent with the CAP for the years between the two benchmarks.

An efficiency metric is calculated by dividing the allowable GHG emissions inventory in a selected calendar year by the service population (residents plus employees), which then leads to the identification of a quantity of emissions that can be permitted on a per service population basis without significantly impacting the environment. This approach is appropriate for the project because it measures the project's emissions on a per service population basis to determine its overall GHG efficiency relative to regulatory GHG reduction goals, as opposed to applying a relatively arbitrary threshold limit that may not be well substantiated. Under the efficiency metric, the project's GHG emissions are evaluated herein relative to the emissions level in the project's build-out year and the build-out year's associated efficiency metric. To that end, an efficiency metric was calculated based on the 2023 emissions level (year of project build-out) and the project's service population (sum of number of employees and the number of estimated hotel guests provided by the project).

As there are no emissions, employment, or population data specific to the project's build-out year (2023), an efficiency metric was generated for year 2023 by interpolating the efficiency metrics for years 2020 and 2035. As illustrated below, the CAP's emission reduction targets for 2020 and 2035 were used to calculate a linear trend line and emissions targets for each interim year. To develop a service population, SANDAG Series 13 Regional Growth Forecast was used to estimate

employment, consistent with the residential population projections in the CAP. A linear trend was then calculated for population in the interim years. Finally, a per service population per year emissions level was generated by dividing the interpolated emissions by the corresponding forecasted service population.

To assess consistent with state goals, an efficiency metric was calculated using the 2030 Scoping Plan. To generate the statewide consistency threshold, the 2020 baseline interpolated to the project's build-out year, using the 5.2% rate of average annual decline identified by CARB as necessary to achievement of SB 32's 2030 reduction target (40% below 1990 levels) and EO S-3-05's 2050 reduction target (80% below 1990 levels) (CARB 2015b).

The efficiency metric for 2020, 2035, and the interpolation for 2023 are illustrated below in Table 12. If the project achieves the 2023 efficiency metric, the project would not interfere with the State of California's ability to achieve the mid-term and long-term GHG reduction targets per SB 32 and EO S-3-05.

Table 12
2020 and 2035 Calculated Efficiency Metric

	Population	Employment	Service Population (Population + Employment)	Emissions (MT CO_2e)	Efficiency Metric (MT/SP/yr)
2020 Efficiency Metric	4,399	4,543	8,941	47,477	5.31
2035 Efficiency Metric – City of Del Mar CAP	4,672	4,704	9,376	27,928	2.98
2035 Efficiency Metric – CARB Annual Reduction	4,672	4,704	9,376	21,311	2.27

Sources: SANDAG 2050 Regional Growth Forecast, Series 13 (SANDAG 2013).
City of Del Mar Climate Action Plan (City of Del Mar 2016)
Notes: CAP = Climate Action Plan; CARB = California Air Resources Board; CO_2e = carbon dioxide equivalent; MT = metric ton; SP = service population; yr = year. Refer to Appendix D for detailed Calculations

As shown in Table 12, the 2035 emissions from the CAP are higher than that calculated using the CARB's Scoping Plan emissions trajectory. The calculated efficiency metric for 2023 using both CARB's Scoping Plan and the CAP are shown in Table 13.

Table 13
2023 Interpolated Efficiency Metric

	2020 Efficiency Metric (MT/SP/yr)	2035 Efficiency Metric (MT/SP/yr)	2023 Efficiency Metric (MT/SP/yr)
Efficiency Metric – City of Del Mar CAP	5.31	2.98	4.83
Efficiency Metric – CARB Annual Reduction	5.31	2.27	4.48

Sources: SANDAG 2050 Regional Growth Forecast, Series 13 (SANDAG 2013).

City of Del Mar Climate Action Plan (City of Del Mar 2016)
Notes: CARB = California Air Resources Board; CAP = Climate Action Plan; MT = metric ton; SP = service population; yr = year

As shown in Table 13, the calculated efficiency metric for 2023 based on the CARB Scoping Plan projected emissions trajectory was 4.48 MT per service population per year. In contrast, when using the same 2020 efficiency metric but using the CAP emissions projection for 2035, the efficiency metric is 4.83 MT per service population per year. The CARB based efficiency metric is thus a more conservative significance threshold and is used further in this report.

Again, this 2023 efficiency metric reflects the trajectory planned in the State of California's Scoping Plan. If the project achieves the 2023 efficiency metric, it would not interfere with attainment of the 2030 and 2050 statewide emission reduction targets, and therefore not interfere with the state's and the City's ability to achieve the mid-term and long-term GHG reduction targets in the City's CAP.

3.4.2 Approach and Methodology

3.4.2.1 Construction

CalEEMod Version 2016.3.2 was used to estimate potential project-generated GHG emissions during construction. Construction of the project would result in GHG emissions primarily associated with use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. All details for construction criteria air pollutants discussed in Section 2.4.2.1, Construction, are also applicable for the estimation of construction-related GHG emissions. As such, see Section 2.4.2.1 for a discussion of construction emissions calculation methodology and assumptions.

3.4.2.2 Operation

CalEEMod Version 2016.3.2 was used to estimate potential project-generated operational GHG emissions from area sources (landscape maintenance), energy sources (natural gas and electricity), mobile sources, solid waste, and water supply and wastewater treatment. Emissions from each category are discussed in the following text with respect to the project. For additional details, see Section 2.4.2.2, Operation, for a discussion of operational emission calculation methodology and assumptions, specifically for area, energy (natural gas), and mobile sources. Operational year 2023 was assumed consistent with the project's construction schedule.

Area Sources

CalEEMod was used to estimate GHG emissions from the project's area sources, which include operation of gasoline-powered landscape maintenance equipment that produce minimal GHG emissions. See Section 2.4.2.2, for a discussion of landscaping equipment emissions calculations.

Consumer product use and architectural coatings result in VOC emissions, which are analyzed in air quality analysis only, and little to no GHG emissions.

Energy Sources

Project–specific energy (electricity and natural gas) use data was used in place of CalEEMod default values (Glumac 2019). To calculate the building energy input (i.e., electricity and natural gas use from regulated and unregulated loads), project–specific energy use data prepared by Glumac which reflected energy use in development meeting the California Green Building Code Tier 1 standards. These data were calculated using the Energy Star Target Finder tool.

Project-specific energy demand for the structures and pools was estimated using the Energy Star Target Finder tool (Glumac 2019). Additionally, the project would install a total of 701-kilowatt in photovoltaic systems that would produce an estimated 45% of project-wide demand including project-wide water heating and pool heating.

The estimation of operational energy emissions was based on project specific energy demand . Emissions are calculated by multiplying the energy use by the utility carbon intensity (pounds of GHGs per kilowatt-hour for electricity or 1,000 British thermal units for natural gas) for CO_2 and other GHGs. Annual natural gas (non-hearth) and electricity emissions were estimated in CalEEMod using the emissions factors for San Diego Gas & Electric (SDG&E), which would be the energy source provider for the project.

CalEEMod default energy intensity factors (CO_2, CH_4, and N_2O mass emissions per kilowatt hour) for SDG&E is based on the value for SDG&E's energy mix in 2009. The CO_2 emissions intensity factor for utility energy use in CalEEMod were adjusted to account for SDG&E's 2017 renewable procurement rate of 44% (SDG&E 2017).

Mobile Sources

All details for criteria air pollutants discussed in Section 2.4.2.2 are also applicable for the estimation of operational mobile source GHG emissions. Regulatory measures related to mobile sources include AB 1493 (Pavley) and related federal standards. AB 1493 required that CARB establish GHG emission standards for automobiles, light-duty trucks, and other vehicles determined by CARB to be vehicles that are primarily used for noncommercial personal transportation in the state. In addition, the NHTSA and EPA have established corporate fuel economy standards and GHG emission standards, respectively, for automobiles and light-, medium-, and heavy-duty vehicles. Implementation of these standards and fleet turnover (replacement of older vehicles with newer ones) will gradually reduce emissions from the project's motor vehicles. The effectiveness of fuel economy improvements was evaluated using the CalEEMod emission factors for motor vehicles in 2023 to the extent it was captured in EMFAC2014.

The Low Carbon Fuel Standard calls for a 10% reduction in the "carbon intensity" of motor vehicle fuels by 2020, which would further reduce GHG emissions. However, the carbon intensity reduction associated with the Low Carbon Fuel Standard was not assumed in EMFAC2014 and thus, was not included in CalEEMod Version 2016.3.2 or the calculations below.

Solid Waste

The project would generate solid waste, and therefore, result in CO_2e emissions associated with landfill off-gassing. CalEEMod default values for solid waste generation were used to estimate GHG emissions associated with solid waste. Under AB 341, the State of California required jurisdictions to achieve a 75% diversion rate by 2020. The City's CAP aims to exceed a waste diversion rate of 80% by 2020 and 90% by 2035. The CAP does not include any specific measures the project would be required to implement. While AB 341 aims for a statewide 75% diversion rate by 2020, project compliance with the 50% diversion rate, consistent with the solid waste diversion requirements of AB 939, Integrated Waste Management Act, has been included in the GHG assessment.

Water and Wastewater

Supply, conveyance, treatment, and distribution of water for the project require the use of electricity, which would result in associated indirect GHG emissions. Similarly, wastewater generated by the project requires the use of electricity for conveyance and treatment, and GHG emissions will be generated during wastewater treatment. Water consumption estimates for both indoor and outdoor water use and associated electricity consumption from water use and wastewater generation were estimated using project-specific estimates using the Energy Star Portfolio Manager (Glumac 2019).

In regards to indoor water use, the project would install low-flow bathroom and kitchen faucets, low-flow toilets, and low-flow showers. In regards to outdoor water, the project would install water-efficient devices and landscaping in accordance with applicable ordinances, including use of drought-tolerant species appropriate to the climate and region. The project has committed to not include turf, which would reduce water use associated with landscaping.

3.4.2.3 Land Use Change and Vegetation Carbon Sequestration

Loss of Sequestered Carbon

The calculation methodology and default values provided in CalEEMod (CAPCOA 2017) were used to calculate potential CO_2 emissions associated with the one-time change in carbon sequestration capacity of a vegetation land use type. The calculation of the one-time loss of sequestered carbon is the product of the converted acreage value and the carbon content value for each land use type (vegetation community). The mass of sequestered carbon per unit area

(expressed in units of MT of CO_2/acre) is dependent on the specific land use type. Assuming that the sequestered carbon is released as CO_2 after removal of the vegetation, annual CO_2 is calculated by multiplying total biomass (MT of dry matter per acre) from IPCC data by the carbon fraction in plant material, and then converting MT of carbon to MT of CO_2 based on the molecular weights of carbon and CO_2.

It is conservatively assumed that all sequestered carbon from the removed vegetation will be returned to the atmosphere; that is, the wood from the trees and vegetation communities would not be re-used in a solid form or another form that would retain carbon. GHG emissions generated during construction activities, including clearing, tree removal, and grading, are estimated in the construction emissions analysis.

The loss of sequestered carbon was estimated for the removal of vegetation and the removal of trees. For the removal of vegetation, CalEEMod calculates GHG emissions resulting from land conversion and uses six[15] general IPCC land use classifications for assigning default carbon content values (in units of MT CO_2/acre). CalEEMod default carbon content values were assumed to estimate the loss of sequestered carbon (release of CO_2) from the removal of the scrub (14.3 MT CO_2/acre), forest (111 MT CO_2/acre), and grassland (4.31 MT CO_2/acre) vegetation categories, which are based on data and formulas provided in the IPCC reports. The project would permanently disturb a total of 15.55 acres with varying carbon content values.

To estimate the loss of sequestered carbon from removing trees, the default CalEEMod values for estimating the gain of sequestered carbon from planting trees were applied. The project would remove a total of 53 trees from the site. The trees that would be removed are of varying species and ages; therefore, the “miscellaneous” tree type from CalEEMod was selected.[16] A growing period of 20 years was assumed consistent with the IPCC active growing period assumption (CAPCOA 2017). While growing periods vary, the IPCC active growing period of 20 years is appropriate because as biomass ages, trees grow more slowly and carbon sequestration slows due to clipping, pruning and death (CAPCOA 2017).

Gain of Sequestered Carbon

The calculation methodology and default values provided in CalEEMod were also used to estimate the one-time carbon-stock change from planting new trees. Trees sequester CO_2 while they are actively growing and the amount of CO_2 sequestered depends on the type of tree. Thereafter, the accumulation of carbon in biomass slows with age, and is assumed to be offset by losses from

[15] Forest land (scrub), forest land (trees), cropland, grassland, wetlands, and other.

[16] The CalEEMod default CO_2 sequestered value for "miscellaneous" trees is greater than the default CO_2 sequestered value for "pine" trees; therefore, the "miscellaneous" value is considered a conservative assumption and an appropriate representation of the mix of 53 trees removed.

clipping, pruning, and occasional death. Active growing periods are subject to, among other things, species, climate regime, and planting density; however, for modeling purposes, CalEEMod assumes the IPCC active growing period of 20 years (CAPCOA 2017).

The sequestered carbon from new trees modeling does not include CO_2 emissions estimates associated with planting, care, and maintenance activities (e.g., tree planting, care vehicle travel, and maintenance equipment operation). Landscape maintenance equipment emissions, which are anticipated to be minimal, were included in the area source emission estimates included in the operational GHG emissions calculations. Conservatively, this analysis does not consider carbon sequestration associated with land preservation or conservation.

CalEEMod calculates GHG sequestration that results from planting of new trees and has default carbon content values (in units of MT CO_2 per tree per year) for 10 different general tree species and a miscellaneous tree category.[17] As the types of tree species that will be planted within the project area are currently unknown, the CO_2 sequestration rate of 0.0354 MT CO_2 per tree per year for the miscellaneous tree species category was assumed in this analysis. It is assumed that all 77 trees will grow for a minimum of 20 years consistent with CalEEMod (CAPCOA 2017).

3.5 Impact Analysis

3.5.1 Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction Emissions

Construction of the project would result in GHG emissions, which are primarily associated with use of off-road construction equipment, on-road vendor trucks, and worker vehicles. The SCAQMD *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold* (2009) recommends that "construction emissions be amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies." Thus, the total construction GHG emissions were calculated, amortized over 30 years, and added to the total operational emissions for comparison with the GHG significance threshold of 4.48 MT CO_2e per service population per year. The determination of significance, therefore, is addressed in the operational emissions discussion following the estimated construction emissions.

CalEEMod was used to calculate the annual GHG emissions based on the construction scenario described in Section 2.4.2.1. Construction of the project is anticipated to commence in October

[17] Aspen, soft maple, mixed hardwood, hardwood maple, juniper, cedar/larch, Douglas fir, true fir/hemlock, pine, spruce, and miscellaneous.

2020 and reach completion in November 2022, lasting a total of 26 months. On-site sources of GHG emissions include off-road equipment and off-site sources including haul trucks, vendor trucks, and worker vehicles. Table 14 presents construction emissions for the project in 2020, 2021, and 2022 from on-site and off-site emission sources.

Table 14
Estimated Annual Construction GHG Emissions

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2020	410.74	0.09	0.00	412.87
2021	738.32	0.10	0.00	740.89
2022	556.07	0.08	0.00	558.05
			Total	**1,711.81**

Notes: CO_2 = carbon dioxide; CH_4 = methane; GHG = greenhouse gas; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
See Appendix A for complete results.

As shown in Table 14, the estimated total GHG emissions during construction of would be approximately 1,712 MT CO_2e over the construction period.

As discussed in Section 3.4.2, Carbon Sequestration, the loss of sequestered carbon is estimated based on the carbon content for each vegetation land use type (MT CO_2 per acre) and the initial and final acreage of the vegetation land use type. The project would permanently impact 0.27acres of scrubland, and 4.15 acres of grasslands. The project would also permanently impact 9.18 acres of disturbed habitat and 1.79 acres of developed land which do not have carbon value per CalEEMod (CAPCOA 2017), but are presented for completeness. The loss of sequestered carbon associated with the project's land use change is presented in Table 15.

Table 15
Vegetation Removal – Estimated Loss of Sequestered Carbon

Project Vegetation Land Use	Vegetation Land Use Category	Vegetation Land Use Category Subtype	Permanent Impact Acreage (acres)	Biogenic CO_2 Emissions (MT CO_2/Acre)	Sequestered CO_2 (MT CO_2)
Southern Coastal Bluff Scrub	Forest Land	Scrub	0.27	14.3	3.86
Ornamental	Grassland	Grassland	4.15	4.3	17.85
Disturbed Habitat	Others	Others	9.18	0.0	0.00
Urban/Developed	Others	Others	1.79	0.0	0.00
				Total	**21.71**

Source: CAPCOA 2017.
Notes: CO_2 = carbon dioxide; MT CO_2 = metric tons of carbon dioxide.
See Appendix A for complete results.

The loss of sequestered carbon from the removal of individual trees was estimated using the same process as estimating carbon gain from new trees as described in Section 3.4.2. The 53 trees that would be removed from the project site were assumed to have completed the active growing cycle, which is assumed to be 20 years (CAPCOA 2017).[18] The loss of sequestered carbon from tree removal is presented in Table 16.

Table 16
Removed Trees – Estimated Loss of Sequestered Carbon

Project Tree Category/Species	Tree Category	Growing Period (year)	Number of Trees (trees)	Tree CO_2 Sequestered Factor (MT CO_2/Tree/Year)	Gain of Sequestered CO_2 (MT CO_2)
Various	Miscellaneous	20	53	0.0354	37.52
				Total	**37.52**

Source: CAPCOA 2017.
Notes: CO_2 = carbon dioxide; MT CO_2 = metric tons carbon dioxide.
See Appendix A for calculations and references.

As shown in Table 14, the total construction emissions for the project were 1,712 MT CO_2e. The combined emissions for the construction period plus the total loss of carbon due to vegetation and tree removal (59 MT CO_2e; Tables 15 and 16) is estimated to be 1,771 MT CO_2e. The "project life" is assumed to be 30 years, which is consistent with the 30-year project life time frame used by SCAQMD's GHG guidance (SCAQMD 2008). Accordingly, the loss of sequestered carbon and construction emissions amortized over 30 years is approximately 59 MT CO_2e per year.

Operational Emissions

Operation of the project would generate GHG emissions through motor vehicle trips to and from the project site; landscape maintenance equipment operation; energy use (natural gas and generation of electricity consumed by the project); solid waste disposal; and generation of electricity associated with water supply, treatment, and distribution and wastewater treatment. CalEEMod was used to calculate the annual GHG emissions based on the operational assumptions described in Section 3.4.2.2, Operation.

[18] The program assumes the IPCC active growing period of 20 years. Thereafter, the accumulation of carbon in biomass slows with age, and will be completely offset by losses from clipping, pruning, and occasional death. Actual active growing periods are subject to, among other things, species, climate regime, and planting density. Note that trees may also be replaced at the end of the 20-year cycle, which would result in additional years of carbon sequestration. However, this would be offset by the potential net release of carbon from the removal of the replaced tree.

The estimated operational (year 2023) project-generated GHG emissions from area sources, energy usage, motor vehicles, solid waste generation, and water usage and wastewater generation are shown in Table 17.

Table 17
Estimated Annual Operational GHG Emissions

Emission Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Area	139.93	<0.01[a]	<0.01[a]	140.78
Energy	1,407.42	0.05	0.02	1,415.62
Reduction from Photovoltaics	(206.80)	(0.01)	(<0.01)[a]	(207.65)
Mobile	1,586.59	0.08	0.00	1,588.58
Solid Waste	9.43	0.56	0.00	23.37
Water Supply and Wastewater	46.79	0.02	0.01	50.71
Total	2,983.36	0.70	0.03	3,011.41
			Amortized Construction Emissions	*59.03*
			Operation + Amortized Construction Total	**3,070.44**

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent
See Appendix A for detailed results.
These emissions reflect CalEEMod "mitigated" output and operational year 2023.
[a] <0.01 = value less than reported 0.01 metric tons per year.

As shown in Table 17, estimated annual project-generated GHG emissions would be approximately 3,011 MT CO_2e per year as a result of project operations only. Estimated annual project-generated operational emissions in 2023 plus amortized project construction emissions would be approximately 3,070 MT CO_2e per year.

As discussed in Section 3.3.2, this GHG analysis also estimates the gain of sequestered carbon that would result from the planting and growth of trees on site. The gain of sequestered carbon resulting from planting and growth of approximately 77 miscellaneous trees on site is estimated based on the carbon sequestration rate for the tree species, the number of new trees, and the growing period. Table 18 presents the estimated one-time carbon-stock change resulting from proposed planting of new trees.

Table 18
Planted Trees – Estimated Gain of Sequestered Carbon

Project Tree Category/Species	Tree Category	Growing Period (year)	Number of Trees (trees)	Tree CO_2 Sequestered Factor (MT CO_2/Tree/Year)	Gain of Sequestered CO_2 (MT CO_2)
Various	Miscellaneous	20	77	0.0354	54.52
				Total	**54.52**

Source: CAPCOA 2016.
Notes: CO_2 = carbon dioxide; MT CO_2 = metric tons carbon dioxide.
See Appendix A for calculations and references.

As presented in Table 18, the gain in sequestered carbon resulting from planting 77 trees would be approximately 55 MT CO_2. To interpret an annual sequestration, the total sequestered CO_2 was divided by the project lifetime of 30 years, resulting in 2 MT CO_2 annually.

The project would entail 353 employees, 146 full-time residents of the villas, 8 residents of the single-family housing units, 45 residents of the affordable housing, and 135 hotel guests.[19] Therefore, the service population of the project would be 687 people.

Estimated annual GHG emissions of 3,068 MT CO_2e per year divided by a service population of 687 people is 4.47 MT CO_2e per service population per year. As such, annual operational GHG emissions with amortized construction emissions would not exceed the statewide service population threshold of 4.48 MT CO_2e per service population per year. Therefore, the project's GHG contribution would not be cumulatively considerable and is **less than significant**.

Mitigation Measures

None required.

Level of Significance After Mitigation

Impacts would be less than significant without mitigation.

3.5.2 Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Consistency with the City's Climate Action Plan

As previously discussed, the City's CAP is not a qualified CAP under CEQA Section 15183.5, and does not include project-specific requirements. The City's CAP is a long-range plan to reduce GHG emissions from communitywide activities within the City and would also prepare the City from the impending effects of climate change. The City is committed to reducing its GHG emissions by 15% below 2012 levels by 2020 and 50% below 2012 levels by 2035, consistent with AB 32 and the State of California's GHG emission reduction goals. In order to reduce citywide GHG emissions, the CAP identifies a series of reduction measures or strategies, which will guide the City in several key focus areas (e.g., energy and buildings, water and waste, transportation, and urban tree planting). Table 20 presents the project's consistency with the CAP.

[19] The household size of the villas was assumed to be 2.02 persons consistent with the average household size in the City of Del Mar. Each workforce housing unit was assumed to have one resident. Each hotel room is anticipated to have an average of 1.8 guests per room, which was determined by 2017 occupancy rates at a similar resort and does not reflect a fully occupied hotel.

Table 20
Project Consistency with the City of Del Mar CAP

Project Compliance	CAP Measure
Goal 1: Residential Photovoltaics	**Consistent**: The project would install a photovoltaic system on the villas that would produce 678,000 kilowatt-hours (kWh) annually. This represents 94% of the villas energy demand.
Goal 2: Non-Residential Photovoltaics	**Consistent**: The project would install a photovoltaic system on the hotel that would produce 339,000 kWh annually. This represents 28% of the hotels energy demand.
Goal 3: Residential Efficiency Retrofits—Single-Family Homes	**Not Applicable**: The project would not include the retrofit of existing buildings.
Goal 4: Residential Efficiency Retrofits—Multifamily Homes	**Not Applicable**: The project would not include the retrofit of existing buildings.
Goal 5: Non-Residential Efficiency Retrofits	**Not Applicable**: The project would not include the retrofit of existing buildings.
Goal 6: Residential Solar Hot Water Heater Installation	**Consistent**: The project would install a solar hot water systems to serve the domestic hot water and pool heating. The systems would produce a combined 16,000 therms.
Goal 7: Renewable Energy Supply	**Consistent**: The project would be served by SDG&E, which as of 2017 had a 44% renewable energy content value (SDG&E 2017). Additionally, 45% of the project's electricity demand would be offset by photovoltaic systems. This would meet the City's goal of procuring 50% of renewable energy supply by 2020.
Goal 8: Reduce Residential Indoor Water Consumption in Remodeled Single-Family Homes	**Not Applicable**: The project would not include the redevelopment of single-family homes.
Goal 9: Reduce Outdoor Water Consumption	**Consistent:** The project will be consistent with Del Mar's Model Water Efficient Landscape Ordinance (MWELO). According to MWELO, there is an allotment of 5.9 million gallons per year (MGY); it is estimated that the project would have a usage of 3.5 MGY of recycled water. The irrigation controller will receive localized real-time evapotranspiration data that can adjust daily application of water through run-time adjustments. The controller will be specified with flow sensing equipment that monitors flow rates to terminate irrigation as a result of high or low flow situations. Flow alarms will be communicated to the facility maintenance manager via email or cell phone alert. A rain sensor will also be installed to terminate irrigation during wet weather.
Goal 10: Pool Cover Program	**Consistent**: The project's pools would be covered after hours in order to save energy and water.
Goal 11: Divert Waste from Landfills and Capture Emissions	**Consistent**: The project would comply with all applicable local and state regulations. Additionally, the project would adopt a "Waste Management Policy" which would implement a waste stream monitoring program and identifying proper disposal strategies.

Table 20
Project Consistency with the City of Del Mar CAP

Project Compliance	CAP Measure
Goal 12: Capture Emissions from Wastewater Treatment	**Not Applicable**: The project would not include a wastewater treatment plant.
Goal 13: Increase Mass Transit Ridership	**Consistent**: The project's transportation demand management measures include: providing a free shuttle from the Solana Beach coaster station, providing employees with Compass Card on which transit fares can be stored, and offer employees free monthly transit passes.
Goal 14: Adopt a Bicycle Strategy	**Consistent**: The project would provide short-term and long-term bicycle parking spaces consisting of convenient and secure, permanently anchored bicycle racks. The project would also host a bike-share program.
Goal 15: Pedestrian Mobility Plan	**Consistent**: The project would improve the crossings at Via de la Valle and Camino Del Mar.
Goal 16: Increase the Percentage of VMT Being Driven by Electric and Alternative Fuel Vehicles	**Consistent**: The project would provide 1% of the parking spaces to be equipped with electric vehicle charging equipment. The project would designate 6% of total parking as 'EV Capable'. Additionally, each residential unit would be outfitted with an electrical vehicle-charging unit.
Goal 17: Increase Number of Preferential Parking Spaces for Clean Vehicles	**Consistent**: The project would be consistent with California Green Building Code Section 5.106.5.2 "Designated Parking For Clean Air Vehicles". The project would designate 8% of total parking as designated for low emitting, or fuel-efficient and carpool/van pool vehicles.
Goal 18: Install Roundabouts	**Not Applicable**: The project does not include road reconfiguration.
Goal 19: Increase Percentage of Population with Alternate Work Schedules	**Consistent**: The project would include a variety of employees with alternate work schedules, including housekeeping, customer service, and restaurant employees.
Goal 20: Increase Telecommuting	**Not Applicable**: The project does not include employees with job duties suitable for telecommuting.
Goal 21: Increase Van Pooling	**Consistent**: The project's transportation demand management measures include providing preferential parking for vanpools and maintaining commute transportation information on display. Additionally, the project would provide a visitor shuttle into downtown Del Mar.
Goal 22: Implement Urban Tree Planting Program	**Consistent**: The project would plant 77 trees on the project site.

Source: LLG 2017.
Notes: VMT = vehicle miles traveled; EV = electric vehicle.

Additionally, the project's GHG emissions of 4.47 MT CO_2e per service population per year, which is less than the CAP efficiency threshold, demonstrates compliance with the CAP. Measures outlined

within the CAP would not be directly applicable to the project and are intended for the City to implement. Therefore, the project would not conflict with the City's CAP.

Consistency with SANDAG'S San Diego Forward: The Regional Plan

Regarding consistency with SANDAG's Regional Plan, the project would be developed to support the policy objectives of the RTP and SB 375. For example, the project would include a shuttle to the coaster station, provide employees with free transit passes, and include a bike share program. Additionally, on-site generation of energy for electricity and hot water which will offset a portion of energy consumption and power all community facilities would support environmental stewardship in everyday operation of the project.

Table 21 illustrates the project's consistency with applicable goals and policies of *San Diego Forward: The Regional Plan* (SANDAG 2015).

Table 21
San Diego Forward: The Regional Plan Consistency Analysis

Category	Policy Objective or Strategy	Consistency Analysis
The Regional Plan – Policy Objectives		
Mobility Choices	Provide safe, secure, healthy, affordable, and convenient travel choices between the places where people live, work, and play.	*Consistent.* The project would provide all employees with a Compass Card, which would provide them free access to the Coaster and local Breeze buses. Additionally, the project would provide a shuttle from the Solana Beach Coaster Station and provide a bike share program.
Mobility Choices	Take advantage of new technologies to make the transportation system more efficient and environmentally friendly.	*Not applicable.* The project would not impair the ability of SANDAG to implement new technologies within the transportation system within the region.
Habitat and Open Space Preservation	Focus growth in areas that are already urbanized, allowing the region to set aside and restore more open space in our less developed areas.	*Consistent.* The project would be built in an urbanized area near downtown Solana Beach and Del Mar. The project would preserve access to the coastline and north bluff preserve.
Habitat and Open Space Preservation	Protect and restore our region's urban canyons, coastlines, beaches, and water resources.	*Consistent.* The project would enhance public access to open space and the coastline. The project would utilize low impact development to prevent run off into the ocean from storm water and irrigation.
Regional Economic Prosperity	Invest in transportation projects that provide access for all communities to a variety of jobs with competitive wages.	*Not Applicable.* The project would not impair the ability of SANDAG to invest in transportation projects available to all members of the Community.

Table 21
San Diego Forward: The Regional Plan Consistency Analysis

Category	Policy Objective or Strategy	Consistency Analysis
Regional Economic Prosperity	Build infrastructure that makes the movement of freight in our community more efficient and environmentally friendly.	*Not Applicable.* The project does not propose regional freight movement, nor would it impair SANDAG's ability to preserve and expand options for regional freight movement.
Partnerships/Collaboration	Collaborate with Native American tribes, Mexico, military bases, neighboring counties, infrastructure providers, the private sector, and local communities to design a transportation system that connects to the mega-region and national network, and works for everyone and fosters a high quality of life for all.	*Not Applicable.* The project would not impair the ability of SANDAG to provide transportation choices to better connect the San Diego region with Mexico, neighboring counties, and tribal nations.
Partnerships/Collaboration	As we plan for our region, recognize the vital economic, environmental, cultural, and community linkages between the San Diego region and Baja California.	*Not Applicable.* The project would not impair the ability of SANDAG to provide transportation choices to better connect the San Diego region with Mexico.
Healthy and Complete Communities	Create great places for everyone to live, work, and play.	*Consistent.* The project would provide coastal access, a public pedestrian trail around the project site to the North Bluff Preserve, a low-cost visitors inn, and work force housing.
Healthy and Complete Communities	Connect communities through a variety of transportation choices that promote healthy lifestyles, including walking and biking.	*Consistent.* The project would improve pedestrian crossing at Via de la Valle and Camino del Mar. The project would also include a bike share program.
Environmental Stewardship	Make transportation investments that result in cleaner air, environmental protection, conservation, efficiency, and sustainable living.	*Consistent.* The project would improve pedestrian crossing at Via de la Valle and Camino del Mar. The project would also include a bike share program. Additionally, the project would provide all employees with a Compass Card, which would provide them free access to the Coaster and local Breeze buses. The project would provide a shuttle from the Solana Beach Coaster Station
Environmental Stewardship	Support energy programs that promote sustainability.	*Consistent.* The project would include on-site renewable energy production through a solar photovoltaic rooftop and solar hot water system.
Sustainable Communities Strategy (SCS) – Strategies		
Strategy #1	Focus housing and job growth in urbanized areas where there is existing and planned transportation infrastructure, including transit.	*Consistent.* The project would be located near developed urban and employment centers.

Table 21
San Diego Forward: The Regional Plan Consistency Analysis

Category	Policy Objective or Strategy	Consistency Analysis
Strategy #2	Protect the environment and help ensure the success of smart growth land use policies by preserving sensitive habitat, open space, cultural resources, and farmland.	*Consistent.* The project would protect the North Bluff Preserve. Development would be restricted to an improved coastal access trail, new public viewpoints, a picnic area, and existing pathway and vegetation improvements.
Strategy #3	Invest in a transportation network that gives people transportation choices and reduces GHG emissions.	*Not Applicable.* The project would not impair SANDAG's ability to invest in transportation network choices that reduce GHG emissions.
Strategy #4	Address the housing needs of all economic segments of the population.	*Not Applicable.* The project would develop 22 affordable workforce residential units.
Strategy #5	Implement the Regional Plan through incentives and collaboration.	*Not Applicable.* The project would not impair the ability of SANDAG to implement the RTP through incentives and collaborations.

Source: SANDAG 2015.

As shown in Table 21, the project is consistent with applicable policy objectives and strategies from the SANDAG Regional Plan.

Consistency with EO S-3-05 and SB 32

The project would not impede the attainment of the GHG reduction goals for 2030 or 2050 identified in EO S-3-05 and SB 32. As discussed in Section 3.2.2, EO S-3-05 establishes the following goals: GHG emissions should be reduced to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050. SB 32 establishes for a statewide GHG emissions reduction target whereby CARB, in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions, shall ensure that statewide GHG emissions are reduced to at least 40% below 1990 levels by December 31, 2030. While there are no established protocols or thresholds of significance for that future year analysis; CARB forecasts that compliance with the current Scoping Plan puts the state on a trajectory of meeting these long-term GHG goals, although the specific path to compliance is unknown (CARB 2014).

To begin, CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update to the Climate Change Scoping Plan that "California is on track to meet the near-term 2020 GHG emissions limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32" (CARB 2014). With regard to the 2050 target for reducing GHG emissions to 80% below 1990 levels, the First Update to the Climate Change Scoping Plan states the following (CARB 2014):

> This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts of renewable

> distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80% below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions.

In other words, CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, SB 32, and EO S-3-05. This is confirmed in the *Second Update*, which states (CARB 2017b):

> The Proposed Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while also identifying new, technologically feasibility and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities. The Proposed Plan is developed to be consistent with requirements set forth in AB 32, SB 32, and AB 197.

As discussed previously, the project would not exceed the 2023 interpolated service population threshold, which is consistent with the City's 2030 reduction targets and SB 32. Therefore, the project would not interfere with implementation of any of the above-described GHG reduction goals for 2030 or 2050. Because the project would not exceed the threshold, this analysis provides support for the conclusion that the project would not impede the state's trajectory toward the above-described statewide GHG reduction goals for 2030 or 2050. In addition, Table 22 below presents the project's consistency with statewide GHG reduction laws and regulations.

Table 22
Greenhouse Gas Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
Building Components/Facility Operations		
Roofs/Ceilings/Insulation	CALGreen Code (Title 24, Part 11) California Energy Code (Title 24, Part 6)	The project must comply with efficiency standards regarding roofing, ceilings, and insulation. For example: Roofs/Ceilings: New construction must reduce roof heat island effects per CALGreen Code Section 106.11.2, which requires use of roofing materials having a minimum aged solar reflectance, thermal emittance complying with Section A5.106.11.2.2 and A5.106.11.2.3 or a minimum aged Solar Reflectance Index as specified in Tables A5.106.11.2.2, or A5.106.11.2.3. Roofing materials must also meet solar reflectance and thermal emittance standards contained in Title 20 Standards.

Table 22
Greenhouse Gas Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
		Roof/Ceiling Insulation: There are also requirements for the installation of roofing and ceiling insulation. (See Title 24, Part 6 Compliance Manual at Section 3.2.2.)
Flooring	CALGreen Code	The project must comply with efficiency standards regarding flooring materials. For example, for 80% of floor area receiving "resilient flooring," the flooring must meet applicable installation and material requirements contained in CALGreen Code Section 5.504.4.6.
Window and Doors (Fenestration)	California Energy Code	The project must comply with fenestration efficiency requirements. For example, the choice of windows, glazed doors, and any skylights for the project must conform to energy consumption requirements affecting size, orientation, and types of fenestration products used. (See Title 24, Part 6 Compliance Manual, Section 3.3.)
Building Walls/Insulation	CALGreen Code California Energy Code	The project must comply with efficiency requirements for building walls and insulation. Exterior Walls: Must meet requirements in current edition of California Energy Code, and comply with Sections A5.106.7.1 or A5.106.7.2 of CALGreen Code for wall surfaces, as well as Section 5.407.1, which required weather-resistant exterior wall and foundation envelope as required by California Building Code Section 1403.2. Construction must also meet requirements contained in Title 24, Part 6, which vary by material of the exterior walls. (See Title 24, Part 6 Compliance Manual, Part 3.2.3.) Demising (Interior) Walls: Mandatory insulation requirements for demising walls (which separate conditioned from non-conditions space) differ by the type of wall material used. (*Id*. at 3.2.4.) Door Insulation: There are mandatory requirements for air infiltration rates to improve insulation efficiency; they differ according to the type of door. (*Id*. at 3.2.5.) Flooring Insulation: There are mandatory requirements for insulation that depend on the material and location of the flooring. (*Id*. at 3.2.6.)
Finish Materials	CALGreen Code	The project must comply with pollutant control requirements for finish materials. For example, materials including adhesives, sealants, caulks, paints and coatings, carpet systems, and composite wood products must meet requirements in CALGreen Code to ensure pollutant control. (CALGreen Code Section 5.504.4.)
Wet Appliances (Toilets/Faucets/Urinals, Dishwasher/Clothes Washer, Spa and Pool/Water Heater)	CALGreen Code California Energy Code Appliance Efficiency Regulations (Title 20 Standards)	Wet appliances associated with the project must meet various efficiency requirements. For example: Spa and Pool: Use associated with the project is subject to appliance efficiency requirements for service water heating systems and equipment, spa and pool heating systems and equipment. (Title 24, Part 6, Sections 110.3, 110.4, 110.5; Title 20 Standards, Sections 1605.1(g), 1605.3(g); see also California Energy Code.)

Table 22
Greenhouse Gas Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
		Toilets/Faucets/Urinals: Use associated with the project is subject to maximum rates for toilets, urinals, and faucets: • Showerheads maximum flow rate 2.5 gpm at 80 psi • Wash fountains 2.2 x (rim space in inches/20) gpm at 60 psi • Metering faucets 0.25 gallons/cycle • Lavatory faucets and aerators 1.2 gpm at 60 psi • Kitchen faucets and aerators 1.8 gpm with optional temporary flow of 2.2 gpm at 60 psi • Public lavatory faucets 0.5 gpm at 60 psi • Trough-type urinals 16 inches length • Wall mounted urinals 0.125 gallons per flush • Other urinals 0.5 gallons per flush (Title 20 Standards, Sections 1605.1(h),(i) 1065.3(h),(i).) Water Heaters: Use associated with the project is subject to appliance efficiency requirements for water heaters. (Title 20 Standards, Sections 1605.1(f), 1605.3(f).) Dishwasher/Clothes Washer: Use associated with the project is subject to appliance efficiency requirements for dishwashers and clothes washers. (Title 20 Standards, Sections 1605.1(o),(p),(q), 1605.3(o),(p),(q).)
Dry Appliances (Refrigerator/Freezer, Heater/Air Conditioner, Clothes Dryer)	Title 20 Standards CALGreen Code	Dry appliances associated with the project must meet various efficiency requirements. For example: Refrigerator/Freezer: Use associated with the project is subject to appliance efficiency requirements for refrigerators and freezers. (Title 20 Standards, Sections 1605.1(a), 1605.3(a).) Heater/Air Conditioner: Use associated with the project is subject to appliance efficiency requirements for heaters and air conditioners. (Title 20 Standards, Sections 1605.1(b),(c),(d),(e), 1605.3(b),(c),(d),(e) as applicable.) Clothes Dryer: Use associated with the project is subject to appliance efficiency requirements for clothes dryers. (Title 20 Standards, Section 1605.1(q).)
	CALGreen Code	Installations of HVAC, refrigeration and fire suppression equipment must comply with CALGreen Code Sections 5.508.1.1 and 508.1.2, which prohibits CFCs, halons, and certain HCFCs and HFCs.
Lighting	Title 20 Standards	Lighting associated with the project will be subject to energy efficiency requirements contained in Title 20 Standards. General Lighting: Indoor and outdoor lighting associated with the project must comply with applicable appliance efficiency regulations (Title 20 Standards, Sections 1605.1(j),(k),(n), 1605.3(j),(k),(n).) Emergency lighting and self-contained lighting: the project must also comply with applicable appliance efficiency regulations (Title 20 Standards, Sections 1605.1(l), 1605.3(l).)

Table 22
Greenhouse Gas Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
		Traffic Signal Lighting: For any necessary project improvements involving traffic lighting, traffic signal modules and traffic signal lamps will need to comply with applicable appliance efficiency regulations (Title 20 Standards, Sections 1605.1(m), 1605.3(m).)
	California Energy Code	Lighting associated with the project will also be subject to energy efficiency requirements contained in Title 24, Part 6, which contains energy standards for non-residential indoor lighting and outdoor lighting. (See Title 24 Part 6 Compliance Manual, at Sections 5, 6.) Mandatory lighting controls for indoor lighting include, for example, regulations for automatic shut-off, automatic daytime controls, demand responsive controls, and certificates of installation. (Id. at Section 5.) Regulations for outdoor lighting include, for example, creation of lighting zones, lighting power requirements, a hardscape lighting power allowance, requirements for outdoor incandescent and luminaire lighting, and lighting control functionality. (Id. at Section 6.)
	AB 1109	Lighting associated with the project will be subject to energy efficiency requirements adopted pursuant to AB 1109. Enacted in 2007, AB 1109 required the CEC to adopt minimum energy efficiency standards for general purpose lighting, to reduce electricity consumption 50% for indoor residential lighting and 25% for indoor commercial lighting.
Bicycle and Vehicle Parking	CALGreen Code	The project will be required to provide compliant bicycle parking, fuel-efficient vehicle parking, and electric vehicle charging spaces (CALGreen Code Sections 5.106.4, 5.106.5.1, 5.106.5.3)
	California Energy Code	The project is also subject to parking requirements contained in Title 24, Party 6. For example, parking capacity is to meet but not exceed minimum local zoning requirements, and the project should employ approved strategies to reduce parking capacity (Title 24, Part 6, section 106.6)
Landscaping	CALGreen Code	The CALGreen Code requires and has further voluntary provisions for: - A water budget for landscape irrigation use; - For new water service, separate meters or submeters must be installed for indoor and outdoor potable water use for landscaped areas of 1,000-5,000 square feet; - Provide water-efficient landscape design that reduces use of potable water beyond initial requirements for plant installation and establishment
	EO B-29-15	The project is also subject to emissions reduction requirements to be achieved by implementation of EO B-29-15. This emergency executive order directs the Department of Water Resources to lead a statewide initiative to replace 50 million square feet of lawns and ornamental turf with drought tolerant landscapes.

Table 22
Greenhouse Gas Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
		The order also directed the departments to update the Model Water Efficient Landscaping Ordinance, which they did in 2015.
	Model Water Efficient Landscaping Ordinance	The model ordinance promotes efficient landscaping in new developments and establishes an outdoor water budget for new and renovated landscaped areas that are 500 square feet or larger. (CCR, Title 23, Division 2, Chapter 2.7.)
	Cap-and-Trade Program	Transportation fuels used in landscape maintenance equipment (e.g., gasoline) would be subject to the Cap-and-Trade Program. (See "Energy Use," below.)
Refrigerants	CARB Management of High GWP Refrigerants for Stationary Sources	Any refrigerants associated with the project will be subject to CARB standards. CARB's Regulation for the Management of High GWP Refrigerants for Stationary Sources 1) reduces emissions of high-GWP refrigerants from leaky stationary, non-residential refrigeration equipment; 2) reduces emissions resulting from the installation and servicing of stationary refrigeration and air conditioning appliances using high-GWP refrigerants; and 3) requires verification GHG emission reductions. (CCR, Title 17, Division 3, Chapter 1, Subchapter 10, Article 4, Subarticle 5.1, Section 95380 et seq.)
Consumer Products	CARB High GWP GHGs in Consumer Products	All consumer products associated with the project will be subject to CARB standards. CARB's consumer products regulations set VOC limits for numerous categories of consumer products, and limits the reactivity of the ingredients used in numerous categories of aerosol coating products (CCR, Title 17, Division 3, Chapter 1, Subchapter 8.5.)
Construction		
Use of Off-Road Diesel Engines, Vehicles, and Equipment	CARB In-Use Off-Road Diesel Vehicle Regulation	Any relevant vehicle or machine use associated with the project will be subject to CARB standards. The CARB In-Use-Off-Road Diesel Vehicle Regulation applies to certain off-road diesel engines, vehicles, or equipment greater than 25 horsepower. The regulation: 1) imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles; 2) requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled; 3) restricts the adding of older vehicles into fleets starting on January 1, 2014; and 4) requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits). The requirements and compliance dates of the Off-Road regulation vary by fleet size, as defined by the regulation.
	Cap-and-Trade Program	Transportation fuels (e.g., gasoline) used in equipment operation would be subject to the Cap-and-Trade Program. (See "Energy Use," below.)
Pollutant Control	CALGreen Code	If an HVAC system is used during construction, the project must use return air filters with a MERV of 8, based on ASHRAE 52.2-1999, or an average efficiency of 30% based on ASHRAE 5.2.1-

Table 22
Greenhouse Gas Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
		1992. All filters must be replaced immediately prior to occupancy. (CALGreen Code Section A5.504.1.3.)
Greening New Construction	CALGreen Code	All new construction, including the project, must comply with CALGreen Code, as discussed in more detail throughout this table. Adoption of the mandatory CALGreen Code standards for construction has been essential for improving the overall environmental performance of new buildings; it also sets voluntary targets for builders to exceed the mandatory requirements.
Construction Waste	CALGreen Code	The project will be subject to CALGreen Code requirements for construction waste reduction, disposal, and recycling, such as a requirement to recycle and/or salvage for reuse a minimum of 50% of the non-hazardous construction waste in accordance with Section 5.408.1.1, 5.408.1.2, or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent.
Worker, vendor and truck vehicle trips (on-road vehicles)	Cap-and-Trade Program	Transportation fuels (e.g., gasoline) used in worker, vendor and truck vehicle trips would be subject to the Cap-and-Trade Program. (See "Energy Use," below.)
Solid Waste		
Solid Waste Management	Landfill Methane Control Measure	Waste associated with the project will be disposed per state requirements for landfills, material recovery facilities, and transfer stations. Per the statewide GHG emissions inventory, the largest emissions from waste management sectors come from landfills, and are in the form of CH_4. In 2010, CARB adopted a regulation that reduces emissions from methane in landfills, primarily by requiring owners and operators of certain uncontrolled municipal solid waste landfills to install gas collection and control systems, and requires existing and newly installed gas and control systems to operate in an optimal manner. The regulation allows local air districts to voluntarily enter into a memorandum of understanding with CARB to implement and enforce the regulation and to assess fees to cover costs of implementation.
	Mandatory Commercial Recycling (AB 341)	AB 341 will require the project, if it generates four cubic yards or more of commercial solid waste per week, to arrange for recycling services, using one of the following: self-haul; subscribe to a hauler(s); arranging for pickup of recyclable materials; subscribing to a recycling service that may include mixed waste processing that yields diversion results comparable to source separation. The project will also be subject to local commercial solid waste recycling program required to be implemented by each jurisdiction under AB 341.
	CALGreen Code	The project will be subject to CALGreen Code requirement to provide areas that serve the entire building and are identified for

Table 22
Greenhouse Gas Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
		the depositing, storage and collection of nonhazardous materials for recycling (CALGreen Code Section 5.410.1)
Energy Use		
Electricity/Natural Gas Generation	Cap-and-Trade Program	Electricity and natural gas usage associated with the project will be subject to the Cap-and-Trade Program. The rules came into effect on January 1, 2013, applying to large electric power plants and large industrial plants. In 2015, importers and distributors of fossil fuels were added to the Cap-and-Trade Program in the second phase. Specifically, on January 1, 2015, cap-and-trade compliance obligations were phased in for suppliers of natural gas, reformulated gasoline blendstock for oxygenate blending (RBOB), distillate fuel oils, and liquefied petroleum gas that meet or exceed specified emissions thresholds. The threshold that triggers a cap-and-trade compliance obligation for a fuel supplier is 25,000 metric tons or more of CO_2e annually from the GHG emissions that would result from full combustion or oxidation of quantities of fuels (including natural gas, RBOB, distillate fuel oil, liquefied petroleum gas, and blended fuels that contain these fuels) imported and/or delivered to California.
Renewable Energy	California RPS (SB X1-2, SB 350, and SB 100)	Energy providers associated with the project will be required to comply with RPS set by SB X1 2, SB 350, and SB 100. SB X1 2 requires investor-owned utilities, publicly-owned utilities, and electric service providers to increase purchases of renewable energy such that at least 33% of retail sales are procured from renewable energy resources by December 31, 2020. In the interim, each entity was required to procure an average of 20% of renewable energy for the period of January 1, 2011 through December 31, 2013; and will be required to procure an average of 25% by December 31, 2016, and 33% by 2020. SB 350 requires retail sellers and publicly owned utilities to procure 50% of their electricity from eligible renewable energy resources by 2030. SB 100 increased the standards set forth in SB 350 establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030, be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California by 2045.
	Million Solar Roofs Program (SB 1)	The project will participate in California's energy market, which is affected by implementation of the Million Solar Roofs Program. As part of Governor Schwarzenegger's Million Solar Roofs Program, California has set a goal to install 3,000 megawatts of new, solar capacity through 2016. The Million Solar Roofs Program is a ratepayer-financed incentive program aimed at

Table 22
Greenhouse Gas Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
		transforming the market for rooftop solar systems by driving down costs over time.
	California Solar Initiative-Thermal Program	The project will participate in California's energy market, which is affected by implementation of the California Solar Initiative - Thermal Program. The program offers cash rebates of up to $4,366 on solar water heating systems for single-family residential customers. Multifamily and Commercial properties qualify for rebates of up to $800,000 on solar water heating systems and eligible solar pool heating systems qualify for rebates of up to $500,000. Funding for the California Solar Initiative-Thermal program comes from ratepayers of Pacific Gas & Electric, SCE, Southern California Gas Company, and San Diego Gas & Electric. The rebate program is overseen by the CPUC as part of the California Solar Initiative.
	Waste Heat and Carbon Emissions Reduction Act (AB 1613, AB 2791)	The project will participate in California's energy market, which is affected by implementation of the Waste Heat and Carbon Emissions Reduction Act. Originally enacted in 2007 and amended in 2008, this act directed the CEC, CPUC, and CARB to implement a program that would encourage the development of new combined heat and power systems in California with a generating capacity of not more than 20 megawatts, to increase combined heat and power use by 30,000 gigawatt-hour. The CPUC publicly owned electric utilities, and CEC duly established policies and procedures for the purchase of electricity from eligible combined heat and power systems. CEC guidelines require combined heat and power systems to be designed to reduce waste energy; have a minimum efficiency of 60%; have NO_x emissions of no more than 0.07 pounds per megawatt-hour; be sized to meet eligible customer generation thermal load; operate continuously in a manner that meets expected thermal load and optimizes efficient use of waste heat; and be cost effective, technologically feasible, and environmentally beneficial.
Vehicular/Mobile Sources		
General	SB 375 and SANDAG Regional Plan	The project complies with, and is subject to, the SANDAG Regional Plan, which CARB approved as meeting its regional GHG targets in 2016.
Fuel	Low Carbon Fuel Standard (LCFS)/ EO S-01-07	Auto trips associated with the project will be subject to LCFS (EO S-01-07), which requires a 10% or greater reduction in the average fuel carbon intensity by 2020 with a 2010 baseline for transportation fuels in California regulated by CARB. The program establishes a strong framework to promote the low carbon fuel adoption necessary to achieve the Governor's 2030 and 2050 GHG goals.

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Greenhouse Gas Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
	Cap-and-Trade Program	Use of gasoline associated with the project will be subject to the Cap-and-Trade Program. The rules came into effect on January 1, 2013, applying to large electric power plants and large industrial plants. In 2015, importers and distributors of fossil fuels were added to the Cap-and-Trade Program in the second phase. Specifically, on January 1, 2015, cap-and-trade compliance obligations were phased in for suppliers of natural gas, RBOB, distillate fuel oils, and liquefied petroleum gas that meet or exceed specified emissions thresholds. The threshold that triggers a cap-and-trade compliance obligation for a fuel supplier is 25,000 MT or more of CO_2e annually from the GHG emissions that would result from full combustion or oxidation of quantities of fuels (including natural gas, RBOB, distillate fuel oil, liquefied petroleum gas, and blended fuels that contain these fuels) imported and/or delivered to California.
Automotive Refrigerants	CARB Regulation for Small Containers of Automotive Refrigerant	Vehicles associated with the project will be subject to CARB's Regulation for Small Containers of Automotive Refrigerant. (CCR, Title 17, Division 3, Chapter 1, Subchapter 10, Article 4, Subarticle 5, Section 95360 et seq.) The regulation applies to the sale, use, and disposal of small containers of automotive refrigerant with a GWP greater than 150. The regulation achieves emission reductions through implementation of four requirements: 1) use of a self-sealing valve on the container, 2) improved labeling instructions, 3) a deposit and recycling program for small containers, and 4) an education program that emphasizes best practices for vehicle recharging. This regulation went into effect on January 1, 2010 with a one-year sell-through period for containers manufactured before January 1, 2010. The target recycle rate is initially set at 90%, and rises to 95% beginning January 1, 2012.
Light-Duty Vehicles	AB 1493 (or the Pavley Standard)	Cars that drive to and from the project will be subject to AB 1493, which directed CARB to adopt a regulation requiring the maximum feasible and cost effective reduction of GHG emissions from new passenger vehicles. Pursuant to AB 1493, CARB adopted regulations that establish a declining fleet average standard for CO_2, CH_4, N_2O, and HFCs (air conditioner refrigerants) in new passenger vehicles and light-duty trucks beginning with the 2009 model year and phased-in through the 2016 model year. These standards are divided into those applicable to lighter and those applicable to heavier portions of the passenger vehicle fleet. The regulations will reduce "upstream" smog-forming emissions from refining, marketing, and distribution of fuel.
	Advanced Clean Car and ZEV Programs	Cars that drive to and from the project will be subject to the Advanced Clean Car and ZEV Programs. In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot and global warming gases and

Table 22
Greenhouse Gas Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
		requirements for greater numbers of zero-emission vehicles into a single package of standards called Advanced Clean Cars. By 2025, new automobiles will emit 34% fewer global warming gases and 75% fewer smog-forming emissions. The ZEV program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles in the 2018-2025 model years.
	Tire Inflation Regulation	Cars that drive to and from the project will be subject to the CARB Tire Inflation Regulation, which took effect on September 1, 2010, and applies to vehicles with a gross vehicle weight rating of 10,000 pounds or less. Under this regulation, automotive service providers must, inter alia, check and inflate each vehicle's tires to the recommended tire pressure rating, with air or nitrogen, as appropriate, at the time of performing any automotive maintenance or repair service, and to keep a copy of the service invoice for a minimum of three years, and make the vehicle service invoice available to the CARB, or its authorized representative upon request.
	EPA and NHTSA GHG and CAFE standards.	Mobile sources that travel to and from the project would be subject to EPA and NHTSA GHG and CAFE standards for passenger cars, light-duty trucks, and medium-duty passenger vehicles. (75 FR 25324–25728 and 77 FR 62624–63200.)
Medium- and Heavy-Duty Vehicles	CARB In-Use On-Road Heavy-Duty Diesel Vehicles Regulation (Truck and Bus Regulation)	Any heavy-duty trucks associated with the project will be subject to CARB standards. The regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet PM filter requirements. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent. The regulation applies to nearly all privately and federally owned diesel fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating greater than 14,000 pounds.
	CARB In-Use Off-Road Diesel Vehicle Regulation	Any relevant vehicle or machine use associated with the project will be subject to CARB standards. The CARB In-Use-Off-Road Diesel Vehicle Regulation applies to certain off-road diesel engines, vehicles, or equipment greater than 25 horsepower. The regulations: 1) imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles; 2) requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled; 3) restricts the adding of older vehicles into fleets starting on January 1, 2014; and 4) requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits).

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Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
		The requirements and compliance dates of the Off-Road regulation vary by fleet size, as defined by the regulation.
	Heavy-Duty Vehicle GHG Emission Reduction Regulation	Any relevant vehicle or machine use associated with the project will be subject to CARB standards. The CARB Heavy-Duty Vehicle GHG Emission Reduction Regulation applies to heavy-duty tractors that pull 53-foot or longer box-type trailers. (CCR, Title 17, Division 3, Chapter 1, Subchapter 10, Article 4, Subarticle 1, Section 95300 et seq.) Fuel efficiency is improved through improvements in tractor and trailer aerodynamics and the use of low rolling resistance tires.
	EPA and NHTSA GHG and CAFE standards.	Mobile sources that travel to and from the project would be subject to EPA and NHTSA GHG and CAFE standards for medium- and heavy-duty vehicles. (76 FR 57106–57513.)
Water Use		
Water Use Efficiency	Emergency State Water Board Regulations	Water use associated with the project will be subject to emergency regulations. On May 18, 2016, partially in response to EO B-27-16, the State Water Board adopted emergency water use regulations (CCR, title 23, Section 864.5 and amended and re-adopted Sections 863, 864, 865, and 866). The regulation directs the State Water Board, Department of Water Resources, and CPUC to implement rates and pricing structures to incentivize water conservation, and calls upon water suppliers, homeowners' associations, California businesses, landlords and tenants, and wholesale water agencies to take stronger conservation measures.
	EO B-37-16	Water use associated with the project will be subject to Emergency EO B-37-16, issued May 9, 2016, which directs the State Water Resources Control Board to adjust emergency water conservation regulations through the end of January, 2017 to reflect differing water supply conditions across the state. The Water Board must also develop a proposal to achieve a mandatory reduction of potable urban water usage that builds off the mandatory 25% reduction called for in EO B-29-15. The Water Board and Department of Water Resources will develop new, permanent water use targets to which the project will be subject. The Water Board will permanently prohibit water-wasting practices such as hosing off sidewalks, driveways, and other hardscapes; washing automobiles with hoses not equipped with a shut-off nozzle; using non-recirculated water in a fountain or other decorative water feature; watering lawns in a manner that causes runoff, or within 48 hours after measurable precipitation; and irrigating ornamental turf on public street medians.
	EO B-40-17	EO B-40-17 lifted the drought emergency in all California counties except Fresno, Kings, Tulare, and Tuolumne. It also rescinds EO B-29-15, but expressly states that EO B-37-16 remains in effect and directs the State Water Resources Control Board to continue

Table 22
Greenhouse Gas Related Laws and Regulations

Project Component	Applicable Laws/ Regulations	GHG Reduction Measures Required for Project
		development of permanent prohibitions on wasteful water use to which the project will be subject.
	SB X7-7	Water provided to the project will be affected by SB X7-7's requirements for water suppliers. SB X7-7, or the Water Conservation Act of 2009, requires all water suppliers to increase water use efficiency. It also requires, among other things, that the Department of Water Resources, in consultation with other state agencies, develop a single standardized water use reporting form, which would be used by both urban and agricultural water agencies.
	CALGreen Code	The project is subject to CALGreen Code's water efficiency standards, including a required 20% mandatory reduction in indoor water use. (CALGreen Code, Division 4.3.)
	California Water Code, Division 6, Part 2.10, Sections 10910–10915.	Development and approval of the project requires the development of a project-specific Water Supply Assessment.
	Cap-and-Trade Program	Electricity usage associated with water and wastewater supply, treatment and distribution would be subject to the Cap-and-Trade Program.
	California RPS (SB X1-2, SB 350, SB 100)	Electricity usage associated with water and wastewater supply, treatment and distribution associated with the project will be required to comply with RPS set by SB X1-2, SB 350, and SB 100.
Water Recycling	Water Reclamation Requirements for Recycled Water Use. State Water Resources Control Board Order WQ 2016-0068-DDW	These requirements replace 2014-0090-DWQ General Waste Discharge Requirements for Recycled Water Use, and establish standard conditions for recycled water use and conditionally delegates authority to an Administrator to manage a Water Recycling Program and issue Water Recycling Permits to recycled water users. Only treated municipal wastewater for non-potable uses can be permitted, such as landscape irrigation, crop irrigation, dust control, industrial/commercial cooling, decorative fountains, etc. Potable reuse is not covered.
	Regulations for Groundwater Replenishment Using Recycled Water	This emergency rulemaking by the California Department of Public Health (California Title of Regulations, Title 22, Sections 60301.050 et seq.), effective June 18, 2014, applied to Groundwater Replenishment Reuse projects utilizing surface application, which received initial permits from the Regional Board. The regulations address permitting and plan approval, sampling requirements, operation requirements, and ongoing reporting requirements.
	Policy for Water Quality Control for Recycled Water. State Water Resources Control Board Resolution No. 2009-0011, as amended by Resolution No. 2013-0003	The project would be subject to the State Water Resources Control Board statewide mandate to increase recycled water usage by 0.2 million acre-feet per year by 2020. It is estimated that the project would have a usage of 3.5 MGY of recycled water.

Based on the preceding considerations, the project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions, and thus impacts would be **less than significant**.

Mitigation Measures

None required.

Level of Significance After Mitigation

Impacts would be less than significant without mitigation.

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13 CCR 2025. Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and Other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles.

13 CCR 2449–2449.3 and Appendix A. General Requirements for In-Use Off-Road Diesel-Fueled Fleets.

13 CCR 2485. Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

17 CCR 95480 et seq. Subarticle 7. Low Carbon Fuel Standard (Refs & Annos)

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5 LIST OF PREPARERS

Jennifer Reed, Air Quality Services Manager
Rose Kelly, Air Quality Specialist/Planner
Ian McIntire, Air Quality Specialist

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APPENDIX A

CalEEMod Output Files

CalEEMod Version: CalEEMod.2016.3.2

Date: 10/16/2019 9:22 AM

Marsol Project
San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	93.34	1000sqft	0.00	93,340.00	0
Hotel	65.00	Room	0.00	131,611.00	0
Motel	10.00	Room	0.00	6,834.00	0
Apartments Low Rise	22.00	Dwelling Unit	0.00	16,174.00	63
Condo/Townhouse	81.00	Dwelling Unit	14.86	171,599.00	232
Single Family Housing	4.00	Dwelling Unit	0.00	28,000.00	11

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2023
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	448.3	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 100% of remaining electricty purchased from CCA or equivalent program

Land Use - Applicant specific information. Total site acreage included in residential uses. User Defined Res = Affordable Housing and Motel = Market Rate Hotel.

Construction Phase - Architectural coating to occur concurrently with building and paving. Demolition concurrent with site preperation.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - For pipeline work.

Off-road Equipment - For pipeline work.

Off-road Equipment - For pipeline work.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Added 2 trenchers for pipeline work.

Trips and VMT - Rounded worker and vendor trips to reflect round trips.

Demolition - Demolition of 5,800 SF building.

Grading - 43,000 CY of soil exported.

Architectural Coating - Del Mar Sustainability Plan

Vehicle Trips - LLG 2019

Woodstoves - No woodstoves or wood burning fireplaces. 166 natural gas fireplaces for hotel and residential uses and 10 fire pits.

Area Coating - Del Mar Sustainability Plan

Energy Use - Glumac 2019

Water And Wastewater - Glumac 2019

Construction Off-road Equipment Mitigation -

Energy Mitigation - 1,017,000 kWh of renewables energy from installation of PVs.

Waste Mitigation - AB 341

Table Name	Column Name	Default Value	New Value
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tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
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tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	100
tblAreaCoating	Area_EF_Nonresidential_Interior	250	50
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tblAreaCoating	Area_EF_Residential_Interior	250	50

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tblConstructionPhase	NumDays	20.00	25.00
tblConstructionPhase	NumDays	20.00	35.00
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	NumDays	10.00	20.00
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2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2360	2.9092	1.6096	4.4500e-003	0.4952	0.1108	0.6060	0.2298	0.1026	0.3324	0.0000	410.7433	410.7433	0.0852	0.0000	412.8735
2021	0.9793	3.4711	3.2713	8.1700e-003	0.3720	0.1431	0.5151	0.0977	0.1349	0.2326	0.0000	738.3161	738.3161	0.1029	0.0000	740.8897
2022	0.9784	2.3734	2.6112	6.1900e-003	0.2004	0.0973	0.2976	0.0540	0.0918	0.1459	0.0000	556.0705	556.0705	0.0790	0.0000	558.0452
Maximum	**0.9793**	**3.4711**	**3.2713**	**8.1700e-003**	**0.4952**	**0.1431**	**0.6060**	**0.2298**	**0.1349**	**0.3324**	**0.0000**	**738.3161**	**738.3161**	**0.1029**	**0.0000**	**740.8897**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2360	2.9092	1.6096	4.4500e-003	0.2521	0.1108	0.3630	0.1113	0.1026	0.2139	0.0000	410.7430	410.7430	0.0852	0.0000	412.8732
2021	0.9793	3.4711	3.2713	8.1700e-003	0.3243	0.1431	0.4674	0.0859	0.1349	0.2209	0.0000	738.3157	738.3157	0.1029	0.0000	740.8893
2022	0.9784	2.3734	2.6112	6.1900e-003	0.2004	0.0973	0.2976	0.0540	0.0918	0.1459	0.0000	556.0701	556.0701	0.0790	0.0000	558.0449
Maximum	**0.9793**	**3.4711**	**3.2713**	**8.1700e-003**	**0.3243**	**0.1431**	**0.4674**	**0.1113**	**0.1349**	**0.2209**	**0.0000**	**738.3157**	**738.3157**	**0.1029**	**0.0000**	**740.8893**

	ROG	NOx	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**	**27.24**	**0.00**	**20.50**	**34.13**	**0.00**	**18.32**	**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	1.5553	0.1289	0.8472	8.1000e-004		0.0141	0.0141		0.0141	0.0141	0.0000	139.9272	139.9272	3.9100e-003	2.5400e-003	140.7823
Energy	0.0957	0.8370	0.4911	5.2200e-003		0.0661	0.0661		0.0661	0.0661	0.0000	1,407.4152	1,407.4152	0.0480	0.0235	1,415.6235
Mobile	0.3884	1.5571	4.7312	0.0172	1.5785	0.0133	1.5917	0.4227	0.0124	0.4350	0.0000	1,586.5913	1,586.5913	0.0796	0.0000	1,588.5812
Waste						0.0000	0.0000		0.0000	0.0000	18.8680	0.0000	18.8680	1.1151	0.0000	46.7447
Water						0.0000	0.0000		0.0000	0.0000	5.0223	41.7654	46.7876	0.0200	0.0115	50.7086
Total	**2.0393**	**2.5229**	**6.0695**	**0.0232**	**1.5785**	**0.0935**	**1.6719**	**0.4227**	**0.0925**	**0.5152**	**23.8903**	**3,175.6990**	**3,199.5893**	**1.2665**	**0.0375**	**3,242.4403**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.5553	0.1289	0.8472	8.1000e-004		0.0141	0.0141		0.0141	0.0141	0.0000	139.9272	139.9272	3.9100e-003	2.5400e-003	140.7823
Energy	0.0957	0.8370	0.4911	5.2200e-003		0.0661	0.0661		0.0661	0.0661	0.0000	1,200.6128	1,200.6128	0.0346	0.0208	1,207.6620
Mobile	0.3884	1.5571	4.7312	0.0172	1.5785	0.0133	1.5917	0.4227	0.0124	0.4350	0.0000	1,586.5913	1,586.5913	0.0796	0.0000	1,588.5812
Waste						0.0000	0.0000		0.0000	0.0000	9.4340	0.0000	9.4340	0.5575	0.0000	23.3724
Water						0.0000	0.0000		0.0000	0.0000	5.0223	41.7654	46.7876	0.0200	0.0115	50.7086
Total	**2.0393**	**2.5229**	**6.0695**	**0.0232**	**1.5785**	**0.0935**	**1.6719**	**0.4227**	**0.0925**	**0.5152**	**14.4563**	**2,968.8967**	**2,983.3529**	**0.6956**	**0.0348**	**3,011.1064**

	ROG	NOx	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	39.49	6.51	6.76	45.08	7.38	7.13

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	10/1/2020	11/11/2020	5	30	
2	Site Preparation	Site Preparation	10/1/2020	11/11/2020	5	30	
3	Pipeline Site Preparation	Site Preparation	11/12/2020	12/9/2020	5	20	For Pipeline
4	Grading	Grading	11/12/2020	1/13/2021	5	45	
5	Pipeline Installation/Backfill	Grading	11/23/2020	12/25/2020	5	25	For Pipeline
6	Pipeline Paving	Paving	12/7/2020	1/8/2021	5	25	For Pipeline
7	Building Construction	Building Construction	1/14/2021	9/21/2022	5	440	
8	Architectural Coating	Architectural Coating	4/13/2021	11/10/2022	5	413	
9	Paving	Paving	9/22/2022	11/9/2022	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 436,940; Residential Outdoor: 145,647; Non-Residential Indoor: 207,668; Non-Residential Outdoor: 69,223; Striped

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	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Pipeline Site Preparation	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Pipeline Installation/Backfill	Excavators	1	8.00	158	0.38
Pipeline Installation/Backfill	Generator Sets	1	8.00	84	0.74
Pipeline Installation/Backfill	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline Paving	Graders	1	8.00	187	0.41
Pipeline Paving	Paving Equipment	1	8.00	132	0.36
Pipeline Paving	Rollers	1	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

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	16.00	0.00	26.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline Site Preparation	1	6.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	4.00	5,376.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline Installation/Backfill	3	4.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline Paving	3	4.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	174.00	50.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	36.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	16.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.8900e-003	0.0000	2.8900e-003	4.4000e-004	0.0000	4.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0497	0.4980	0.3263	5.8000e-004		0.0249	0.0249		0.0231	0.0231	0.0000	50.9979	50.9979	0.0144	0.0000	51.3578
Total	**0.0497**	**0.4980**	**0.3263**	**5.8000e-004**	**2.8900e-003**	**0.0249**	**0.0278**	**4.4000e-004**	**0.0231**	**0.0236**	**0.0000**	**50.9979**	**50.9979**	**0.0144**	**0.0000**	**51.3578**

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	1.0000e-004	3.7000e-003	8.5000e-004	1.0000e-005	2.2000e-004	1.0000e-005	2.3000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	1.0026	1.0026	9.0000e-005	0.0000	1.0049
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	8.8000e-004	6.5000e-004	6.4200e-003	2.0000e-005	1.9200e-003	1.0000e-005	1.9400e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.7397	1.7397	5.0000e-005	0.0000	1.7410
Total	**9.8000e-004**	**4.3500e-003**	**7.2700e-003**	**3.0000e-005**	**2.1400e-003**	**2.0000e-005**	**2.1700e-003**	**5.7000e-004**	**2.0000e-005**	**5.9000e-004**	**0.0000**	**2.7423**	**2.7423**	**1.4000e-004**	**0.0000**	**2.7459**

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					1.3000e-003	0.0000	1.3000e-003	2.0000e-004	0.0000	2.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0497	0.4980	0.3263	5.8000e-004		0.0249	0.0249		0.0231	0.0231	0.0000	50.9979	50.9979	0.0144	0.0000	51.3578
Total	**0.0497**	**0.4980**	**0.3263**	**5.8000e-004**	**1.3000e-003**	**0.0249**	**0.0262**	**2.0000e-004**	**0.0231**	**0.0233**	**0.0000**	**50.9979**	**50.9979**	**0.0144**	**0.0000**	**51.3578**

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	1.0000e-004	3.7000e-003	8.5000e-004	1.0000e-005	2.2000e-004	1.0000e-005	2.3000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	1.0026	1.0026	9.0000e-005	0.0000	1.0049
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	8.8000e-004	6.5000e-004	6.4200e-003	2.0000e-005	1.9200e-003	1.0000e-005	1.9400e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.7397	1.7397	5.0000e-005	0.0000	1.7410
Total	**9.8000e-004**	**4.3500e-003**	**7.2700e-003**	**3.0000e-005**	**2.1400e-003**	**2.0000e-005**	**2.1700e-003**	**5.7000e-004**	**2.0000e-005**	**5.9000e-004**	**0.0000**	**2.7423**	**2.7423**	**1.4000e-004**	**0.0000**	**2.7459**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
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	0.0612	0.6363	0.3227	5.7000e-004		0.0330	0.0330		0.0303	0.0303	0.0000	50.1460	50.1460	0.0162	0.0000	50.5515
Total	**0.0612**	**0.6363**	**0.3227**	**5.7000e-004**	**0.2710**	**0.0330**	**0.3040**	**0.1490**	**0.0303**	**0.1793**	**0.0000**	**50.1460**	**50.1460**	**0.0162**	**0.0000**	**50.5515**

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	2.3000e-004	6.8400e-003	1.8200e-003	2.0000e-005	4.0000e-004	3.0000e-005	4.3000e-004	1.1000e-004	3.0000e-005	1.5000e-004	0.0000	1.5832	1.5832	1.2000e-004	0.0000	1.5862
Worker	1.0000e-003	7.4000e-004	7.2200e-003	2.0000e-005	2.1700e-003	2.0000e-005	2.1800e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.9572	1.9572	6.0000e-005	0.0000	1.9586
Total	**1.2300e-003**	**7.5800e-003**	**9.0400e-003**	**4.0000e-005**	**2.5700e-003**	**5.0000e-005**	**2.6100e-003**	**6.9000e-004**	**4.0000e-005**	**7.4000e-004**	**0.0000**	**3.5403**	**3.5403**	**1.8000e-004**	**0.0000**	**3.5448**

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	0.0612	0.6363	0.3227	5.7000e-004		0.0330	0.0330		0.0303	0.0303	0.0000	50.1460	50.1460	0.0162	0.0000	50.5514
Total	**0.0612**	**0.6363**	**0.3227**	**5.7000e-004**	**0.1220**	**0.0330**	**0.1549**	**0.0670**	**0.0303**	**0.0974**	**0.0000**	**50.1460**	**50.1460**	**0.0162**	**0.0000**	**50.5514**

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	2.3000e-004	6.8400e-003	1.8200e-003	2.0000e-005	4.0000e-004	3.0000e-005	4.3000e-004	1.1000e-004	3.0000e-005	1.5000e-004	0.0000	1.5832	1.5832	1.2000e-004	0.0000	1.5862
Worker	1.0000e-003	7.4000e-004	7.2200e-003	2.0000e-005	2.1700e-003	2.0000e-005	2.1800e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.9572	1.9572	6.0000e-005	0.0000	1.9586
Total	**1.2300e-003**	**7.5800e-003**	**9.0400e-003**	**4.0000e-005**	**2.5700e-003**	**5.0000e-005**	**2.6100e-003**	**6.9000e-004**	**4.0000e-005**	**7.4000e-004**	**0.0000**	**3.5403**	**3.5403**	**1.8000e-004**	**0.0000**	**3.5448**

3.4 Pipeline Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1800e-003	0.0330	0.0369	6.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	5.3766	5.3766	3.4000e-004	0.0000	5.3851
Total	**4.1800e-003**	**0.0330**	**0.0369**	**6.0000e-005**	**0.0000**	**1.9800e-003**	**1.9800e-003**	**0.0000**	**1.9800e-003**	**1.9800e-003**	**0.0000**	**5.3766**	**5.3766**	**3.4000e-004**	**0.0000**	**5.3851**

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	2.2000e-004	1.6000e-004	1.6100e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4349	0.4349	1.0000e-005	0.0000	0.4353
Total	**2.2000e-004**	**1.6000e-004**	**1.6100e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4349**	**0.4349**	**1.0000e-005**	**0.0000**	**0.4353**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1800e-003	0.0330	0.0369	6.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	5.3766	5.3766	3.4000e-004	0.0000	5.3851
Total	**4.1800e-003**	**0.0330**	**0.0369**	**6.0000e-005**	**0.0000**	**1.9800e-003**	**1.9800e-003**	**0.0000**	**1.9800e-003**	**1.9800e-003**	**0.0000**	**5.3766**	**5.3766**	**3.4000e-004**	**0.0000**	**5.3851**

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	2.2000e-004	1.6000e-004	1.6100e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4349	0.4349	1.0000e-005	0.0000	0.4353
Total	**2.2000e-004**	**1.6000e-004**	**1.6100e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4349**	**0.4349**	**1.0000e-005**	**0.0000**	**0.4353**

3.5 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1681	0.0000	0.1681	0.0660	0.0000	0.0660	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0801	0.9036	0.5753	1.1200e-003		0.0391	0.0391		0.0360	0.0360	0.0000	98.0717	98.0717	0.0317	0.0000	98.8647
Total	**0.0801**	**0.9036**	**0.5753**	**1.1200e-003**	**0.1681**	**0.0391**	**0.2072**	**0.0660**	**0.0360**	**0.1020**	**0.0000**	**98.0717**	**98.0717**	**0.0317**	**0.0000**	**98.8647**

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	0.0172	0.6117	0.1401	1.6700e-003	0.0437	1.9300e-003	0.0456	0.0118	1.8500e-003	0.0137	0.0000	165.8494	165.8494	0.0149	0.0000	166.2227
Vendor	2.7000e-004	8.2100e-003	2.1800e-003	2.0000e-005	4.8000e-004	4.0000e-005	5.2000e-004	1.4000e-004	4.0000e-005	1.8000e-004	0.0000	1.8998	1.8998	1.5000e-004	0.0000	1.9034
Worker	1.3300e-003	9.8000e-004	9.6300e-003	3.0000e-005	2.8900e-003	2.0000e-005	2.9100e-003	7.7000e-004	2.0000e-005	7.9000e-004	0.0000	2.6096	2.6096	8.0000e-005	0.0000	2.6115
Total	**0.0188**	**0.6209**	**0.1519**	**1.7200e-003**	**0.0471**	**1.9900e-003**	**0.0491**	**0.0127**	**1.9100e-003**	**0.0146**	**0.0000**	**170.3587**	**170.3587**	**0.0152**	**0.0000**	**170.7377**

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					0.0756	0.0000	0.0756	0.0297	0.0000	0.0297	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0801	0.9036	0.5753	1.1200e-003		0.0391	0.0391		0.0360	0.0360	0.0000	98.0716	98.0716	0.0317	0.0000	98.8646
Total	**0.0801**	**0.9036**	**0.5753**	**1.1200e-003**	**0.0756**	**0.0391**	**0.1148**	**0.0297**	**0.0360**	**0.0657**	**0.0000**	**98.0716**	**98.0716**	**0.0317**	**0.0000**	**98.8646**

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	0.0172	0.6117	0.1401	1.6700e-003	0.0437	1.9300e-003	0.0456	0.0118	1.8500e-003	0.0137	0.0000	165.8494	165.8494	0.0149	0.0000	166.2227
Vendor	2.7000e-004	8.2100e-003	2.1800e-003	2.0000e-005	4.8000e-004	4.0000e-005	5.2000e-004	1.4000e-004	4.0000e-005	1.8000e-004	0.0000	1.8998	1.8998	1.5000e-004	0.0000	1.9034
Worker	1.3300e-003	9.8000e-004	9.6300e-003	3.0000e-005	2.8900e-003	2.0000e-005	2.9100e-003	7.7000e-004	2.0000e-005	7.9000e-004	0.0000	2.6096	2.6096	8.0000e-005	0.0000	2.6115
Total	**0.0188**	**0.6209**	**0.1519**	**1.7200e-003**	**0.0471**	**1.9900e-003**	**0.0491**	**0.0127**	**1.9100e-003**	**0.0146**	**0.0000**	**170.3587**	**170.3587**	**0.0152**	**0.0000**	**170.7377**

3.5 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0868	0.0000	0.0868	0.0213	0.0000	0.0213	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0189	0.2088	0.1390	2.8000e-004		8.9300e-003	8.9300e-003		8.2200e-003	8.2200e-003	0.0000	24.5227	24.5227	7.9300e-003	0.0000	24.7210
Total	**0.0189**	**0.2088**	**0.1390**	**2.8000e-004**	**0.0868**	**8.9300e-003**	**0.0957**	**0.0213**	**8.2200e-003**	**0.0296**	**0.0000**	**24.5227**	**24.5227**	**7.9300e-003**	**0.0000**	**24.7210**

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	4.0400e-003	0.1404	0.0346	4.1000e-004	0.0369	4.2000e-004	0.0373	9.3100e-003	4.1000e-004	9.7200e-003	0.0000	40.9448	40.9448	3.7000e-003	0.0000	41.0371
Vendor	6.0000e-005	1.8500e-003	4.9000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.4706	0.4706	3.0000e-005	0.0000	0.4715
Worker	3.1000e-004	2.2000e-004	2.2500e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6305	0.6305	2.0000e-005	0.0000	0.6309
Total	**4.4100e-003**	**0.1425**	**0.0374**	**4.2000e-004**	**0.0377**	**4.3000e-004**	**0.0381**	**9.5300e-003**	**4.1000e-004**	**9.9600e-003**	**0.0000**	**42.0458**	**42.0458**	**3.7500e-003**	**0.0000**	**42.1395**

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					0.0390	0.0000	0.0390	9.6000e-003	0.0000	9.6000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0189	0.2088	0.1390	2.8000e-004		8.9300e-003	8.9300e-003		8.2200e-003	8.2200e-003	0.0000	24.5227	24.5227	7.9300e-003	0.0000	24.7210
Total	**0.0189**	**0.2088**	**0.1390**	**2.8000e-004**	**0.0390**	**8.9300e-003**	**0.0480**	**9.6000e-003**	**8.2200e-003**	**0.0178**	**0.0000**	**24.5227**	**24.5227**	**7.9300e-003**	**0.0000**	**24.7210**

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	4.0400e-003	0.1404	0.0346	4.1000e-004	0.0369	4.2000e-004	0.0373	9.3100e-003	4.1000e-004	9.7200e-003	0.0000	40.9448	40.9448	3.7000e-003	0.0000	41.0371
Vendor	6.0000e-005	1.8500e-003	4.9000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.4706	0.4706	3.0000e-005	0.0000	0.4715
Worker	3.1000e-004	2.2000e-004	2.2500e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6305	0.6305	2.0000e-005	0.0000	0.6309
Total	**4.4100e-003**	**0.1425**	**0.0374**	**4.2000e-004**	**0.0377**	**4.3000e-004**	**0.0381**	**9.5300e-003**	**4.1000e-004**	**9.9600e-003**	**0.0000**	**42.0458**	**42.0458**	**3.7500e-003**	**0.0000**	**42.1395**

3.6 Pipeline Installation/Backfill - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0107	0.1000	0.1157	1.9000e-004		5.5800e-003	5.5800e-003		5.3300e-003	5.3300e-003	0.0000	16.1470	16.1470	3.3400e-003	0.0000	16.2304
Total	**0.0107**	**0.1000**	**0.1157**	**1.9000e-004**	**0.0000**	**5.5800e-003**	**5.5800e-003**	**0.0000**	**5.3300e-003**	**5.3300e-003**	**0.0000**	**16.1470**	**16.1470**	**3.3400e-003**	**0.0000**	**16.2304**

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	1.0000e-004	2.8500e-003	7.6000e-004	1.0000e-005	1.7000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.6597	0.6597	5.0000e-005	0.0000	0.6609
Worker	1.8000e-004	1.4000e-004	1.3400e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3624	0.3624	1.0000e-005	0.0000	0.3627
Total	**2.8000e-004**	**2.9900e-003**	**2.1000e-003**	**1.0000e-005**	**5.7000e-004**	**1.0000e-005**	**5.8000e-004**	**1.6000e-004**	**1.0000e-005**	**1.7000e-004**	**0.0000**	**1.0221**	**1.0221**	**6.0000e-005**	**0.0000**	**1.0236**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0107	0.1000	0.1157	1.9000e-004		5.5800e-003	5.5800e-003		5.3300e-003	5.3300e-003	0.0000	16.1470	16.1470	3.3400e-003	0.0000	16.2304
Total	**0.0107**	**0.1000**	**0.1157**	**1.9000e-004**	**0.0000**	**5.5800e-003**	**5.5800e-003**	**0.0000**	**5.3300e-003**	**5.3300e-003**	**0.0000**	**16.1470**	**16.1470**	**3.3400e-003**	**0.0000**	**16.2304**

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	1.0000e-004	2.8500e-003	7.6000e-004	1.0000e-005	1.7000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.6597	0.6597	5.0000e-005	0.0000	0.6609
Worker	1.8000e-004	1.4000e-004	1.3400e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3624	0.3624	1.0000e-005	0.0000	0.3627
Total	**2.8000e-004**	**2.9900e-003**	**2.1000e-003**	**1.0000e-005**	**5.7000e-004**	**1.0000e-005**	**5.8000e-004**	**1.6000e-004**	**1.0000e-005**	**1.7000e-004**	**0.0000**	**1.0221**	**1.0221**	**6.0000e-005**	**0.0000**	**1.0236**

3.7 Pipeline Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.4700e-003	0.1002	0.0593	1.3000e-004		4.2000e-003	4.2000e-003		3.8600e-003	3.8600e-003	0.0000	11.1289	11.1289	3.6000e-003	0.0000	11.2189
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.4700e-003**	**0.1002**	**0.0593**	**1.3000e-004**		**4.2000e-003**	**4.2000e-003**		**3.8600e-003**	**3.8600e-003**	**0.0000**	**11.1289**	**11.1289**	**3.6000e-003**	**0.0000**	**11.2189**

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	7.0000e-005	2.1700e-003	5.8000e-004	1.0000e-005	1.3000e-004	1.0000e-005	1.4000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.5013	0.5013	4.0000e-005	0.0000	0.5023
Worker	1.4000e-004	1.0000e-004	1.0200e-003	0.0000	3.0000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2755	0.2755	1.0000e-005	0.0000	0.2757
Total	**2.1000e-004**	**2.2700e-003**	**1.6000e-003**	**1.0000e-005**	**4.3000e-004**	**1.0000e-005**	**4.5000e-004**	**1.2000e-004**	**1.0000e-005**	**1.3000e-004**	**0.0000**	**0.7768**	**0.7768**	**5.0000e-005**	**0.0000**	**0.7780**

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	8.4700e-003	0.1002	0.0593	1.3000e-004		4.2000e-003	4.2000e-003		3.8600e-003	3.8600e-003	0.0000	11.1289	11.1289	3.6000e-003	0.0000	11.2188
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.4700e-003**	**0.1002**	**0.0593**	**1.3000e-004**		**4.2000e-003**	**4.2000e-003**		**3.8600e-003**	**3.8600e-003**	**0.0000**	**11.1289**	**11.1289**	**3.6000e-003**	**0.0000**	**11.2188**

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	7.0000e-005	2.1700e-003	5.8000e-004	1.0000e-005	1.3000e-004	1.0000e-005	1.4000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.5013	0.5013	4.0000e-005	0.0000	0.5023
Worker	1.4000e-004	1.0000e-004	1.0200e-003	0.0000	3.0000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2755	0.2755	1.0000e-005	0.0000	0.2757
Total	**2.1000e-004**	**2.2700e-003**	**1.6000e-003**	**1.0000e-005**	**4.3000e-004**	**1.0000e-005**	**4.5000e-004**	**1.2000e-004**	**1.0000e-005**	**1.3000e-004**	**0.0000**	**0.7768**	**0.7768**	**5.0000e-005**	**0.0000**	**0.7780**

3.7 Pipeline Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5000e-003	0.0294	0.0186	4.0000e-005		1.2000e-003	1.2000e-003		1.1100e-003	1.1100e-003	0.0000	3.5114	3.5114	1.1400e-003	0.0000	3.5398
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.5000e-003**	**0.0294**	**0.0186**	**4.0000e-005**		**1.2000e-003**	**1.2000e-003**		**1.1100e-003**	**1.1100e-003**	**0.0000**	**3.5114**	**3.5114**	**1.1400e-003**	**0.0000**	**3.5398**

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	2.0000e-005	6.2000e-004	1.6000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1569	0.1569	1.0000e-005	0.0000	0.1572
Worker	4.0000e-005	3.0000e-005	3.0000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0841	0.0841	0.0000	0.0000	0.0841
Total	**6.0000e-005**	**6.5000e-004**	**4.6000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.2409**	**0.2409**	**1.0000e-005**	**0.0000**	**0.2413**

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	2.5000e-003	0.0294	0.0186	4.0000e-005		1.2000e-003	1.2000e-003		1.1100e-003	1.1100e-003	0.0000	3.5114	3.5114	1.1400e-003	0.0000	3.5398
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.5000e-003**	**0.0294**	**0.0186**	**4.0000e-005**		**1.2000e-003**	**1.2000e-003**		**1.1100e-003**	**1.1100e-003**	**0.0000**	**3.5114**	**3.5114**	**1.1400e-003**	**0.0000**	**3.5398**

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	2.0000e-005	6.2000e-004	1.6000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1569	0.1569	1.0000e-005	0.0000	0.1572
Worker	4.0000e-005	3.0000e-005	3.0000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0841	0.0841	0.0000	0.0000	0.0841
Total	**6.0000e-005**	**6.5000e-004**	**4.6000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.2409**	**0.2409**	**1.0000e-005**	**0.0000**	**0.2413**

3.8 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2395	2.1964	2.0885	3.3900e-003		0.1208	0.1208		0.1136	0.1136	0.0000	291.8630	291.8630	0.0704	0.0000	293.6233
Total	**0.2395**	**2.1964**	**2.0885**	**3.3900e-003**		**0.1208**	**0.1208**		**0.1136**	**0.1136**	**0.0000**	**291.8630**	**291.8630**	**0.0704**	**0.0000**	**293.6233**

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	0.0195	0.6474	0.1727	1.6900e-003	0.0418	1.3700e-003	0.0432	0.0121	1.3100e-003	0.0134	0.0000	164.7072	164.7072	0.0122	0.0000	165.0128
Worker	0.0762	0.0544	0.5477	1.7000e-003	0.1758	1.2400e-003	0.1771	0.0467	1.1500e-003	0.0479	0.0000	153.5826	153.5826	4.4000e-003	0.0000	153.6926
Total	**0.0957**	**0.7018**	**0.7204**	**3.3900e-003**	**0.2176**	**2.6100e-003**	**0.2203**	**0.0588**	**2.4600e-003**	**0.0612**	**0.0000**	**318.2898**	**318.2898**	**0.0166**	**0.0000**	**318.7055**

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	0.2395	2.1964	2.0885	3.3900e-003		0.1208	0.1208		0.1136	0.1136	0.0000	291.8626	291.8626	0.0704	0.0000	293.6230
Total	**0.2395**	**2.1964**	**2.0885**	**3.3900e-003**		**0.1208**	**0.1208**		**0.1136**	**0.1136**	**0.0000**	**291.8626**	**291.8626**	**0.0704**	**0.0000**	**293.6230**

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	0.0195	0.6474	0.1727	1.6900e-003	0.0418	1.3700e-003	0.0432	0.0121	1.3100e-003	0.0134	0.0000	164.7072	164.7072	0.0122	0.0000	165.0128
Worker	0.0762	0.0544	0.5477	1.7000e-003	0.1758	1.2400e-003	0.1771	0.0467	1.1500e-003	0.0479	0.0000	153.5826	153.5826	4.4000e-003	0.0000	153.6926
Total	**0.0957**	**0.7018**	**0.7204**	**3.3900e-003**	**0.2176**	**2.6100e-003**	**0.2203**	**0.0588**	**2.4600e-003**	**0.0612**	**0.0000**	**318.2898**	**318.2898**	**0.0166**	**0.0000**	**318.7055**

3.8 Building Construction - 2022

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	0.1604	1.4679	1.5382	2.5300e-003		0.0761	0.0761		0.0716	0.0716	0.0000	217.8217	217.8217	0.0522	0.0000	219.1263
Total	**0.1604**	**1.4679**	**1.5382**	**2.5300e-003**		**0.0761**	**0.0761**		**0.0716**	**0.0716**	**0.0000**	**217.8217**	**217.8217**	**0.0522**	**0.0000**	**219.1263**

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	0.0135	0.4561	0.1220	1.2500e-003	0.0312	8.8000e-004	0.0321	9.0100e-003	8.4000e-004	9.8500e-003	0.0000	121.7132	121.7132	8.8300e-003	0.0000	121.9340
Worker	0.0538	0.0370	0.3794	1.2200e-003	0.1312	9.1000e-004	0.1321	0.0349	8.4000e-004	0.0357	0.0000	110.3773	110.3773	3.0100e-003	0.0000	110.4525
Total	**0.0673**	**0.4931**	**0.5013**	**2.4700e-003**	**0.1624**	**1.7900e-003**	**0.1642**	**0.0439**	**1.6800e-003**	**0.0455**	**0.0000**	**232.0905**	**232.0905**	**0.0118**	**0.0000**	**232.3866**

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	0.1604	1.4679	1.5382	2.5300e-003		0.0761	0.0761		0.0716	0.0716	0.0000	217.8215	217.8215	0.0522	0.0000	219.1261
Total	**0.1604**	**1.4679**	**1.5382**	**2.5300e-003**		**0.0761**	**0.0761**		**0.0716**	**0.0716**	**0.0000**	**217.8215**	**217.8215**	**0.0522**	**0.0000**	**219.1261**

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	0.0135	0.4561	0.1220	1.2500e-003	0.0312	8.8000e-004	0.0321	9.0100e-003	8.4000e-004	9.8500e-003	0.0000	121.7132	121.7132	8.8300e-003	0.0000	121.9340
Worker	0.0538	0.0370	0.3794	1.2200e-003	0.1312	9.1000e-004	0.1321	0.0349	8.4000e-004	0.0357	0.0000	110.3773	110.3773	3.0100e-003	0.0000	110.4525
Total	**0.0673**	**0.4931**	**0.5013**	**2.4700e-003**	**0.1624**	**1.7900e-003**	**0.1642**	**0.0439**	**1.6800e-003**	**0.0455**	**0.0000**	**232.0905**	**232.0905**	**0.0118**	**0.0000**	**232.3866**

3.9 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5846					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0207	0.1443	0.1718	2.8000e-004		8.8900e-003	8.8900e-003		8.8900e-003	8.8900e-003	0.0000	24.1283	24.1283	1.6600e-003	0.0000	24.1696
Total	**0.6052**	**0.1443**	**0.1718**	**2.8000e-004**		**8.8900e-003**	**8.8900e-003**		**8.8900e-003**	**8.8900e-003**	**0.0000**	**24.1283**	**24.1283**	**1.6600e-003**	**0.0000**	**24.1696**

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	1.1700e-003	0.0389	0.0104	1.0000e-004	2.5100e-003	8.0000e-005	2.5900e-003	7.2000e-004	8.0000e-005	8.0000e-004	0.0000	9.8824	9.8824	7.3000e-004	0.0000	9.9008
Worker	0.0118	8.4400e-003	0.0850	2.6000e-004	0.0273	1.9000e-004	0.0275	7.2500e-003	1.8000e-004	7.4300e-003	0.0000	23.8318	23.8318	6.8000e-004	0.0000	23.8489
Total	**0.0130**	**0.0473**	**0.0954**	**3.6000e-004**	**0.0298**	**2.7000e-004**	**0.0301**	**7.9700e-003**	**2.6000e-004**	**8.2300e-003**	**0.0000**	**33.7142**	**33.7142**	**1.4100e-003**	**0.0000**	**33.7496**

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	0.5846					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0207	0.1443	0.1718	2.8000e-004		8.8900e-003	8.8900e-003		8.8900e-003	8.8900e-003	0.0000	24.1282	24.1282	1.6600e-003	0.0000	24.1696
Total	**0.6052**	**0.1443**	**0.1718**	**2.8000e-004**		**8.8900e-003**	**8.8900e-003**		**8.8900e-003**	**8.8900e-003**	**0.0000**	**24.1282**	**24.1282**	**1.6600e-003**	**0.0000**	**24.1696**

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	1.1700e-003	0.0389	0.0104	1.0000e-004	2.5100e-003	8.0000e-005	2.5900e-003	7.2000e-004	8.0000e-005	8.0000e-004	0.0000	9.8824	9.8824	7.3000e-004	0.0000	9.9008
Worker	0.0118	8.4400e-003	0.0850	2.6000e-004	0.0273	1.9000e-004	0.0275	7.2500e-003	1.8000e-004	7.4300e-003	0.0000	23.8318	23.8318	6.8000e-004	0.0000	23.8489
Total	**0.0130**	**0.0473**	**0.0954**	**3.6000e-004**	**0.0298**	**2.7000e-004**	**0.0301**	**7.9700e-003**	**2.6000e-004**	**8.2300e-003**	**0.0000**	**33.7142**	**33.7142**	**1.4100e-003**	**0.0000**	**33.7496**

3.9 Architectural Coating - 2022

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	0.6928					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0229	0.1578	0.2031	3.3000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	28.5964	28.5964	1.8600e-003	0.0000	28.6430
Total	**0.7157**	**0.1578**	**0.2031**	**3.3000e-004**		**9.1500e-003**	**9.1500e-003**		**9.1500e-003**	**9.1500e-003**	**0.0000**	**28.5964**	**28.5964**	**1.8600e-003**	**0.0000**	**28.6430**

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	1.2900e-003	0.0435	0.0116	1.2000e-004	2.9700e-003	8.0000e-005	3.0600e-003	8.6000e-004	8.0000e-005	9.4000e-004	0.0000	11.6016	11.6016	8.4000e-004	0.0000	11.6227
Worker	0.0133	9.1200e-003	0.0935	3.0000e-004	0.0323	2.2000e-004	0.0326	8.5900e-003	2.1000e-004	8.8000e-003	0.0000	27.2097	27.2097	7.4000e-004	0.0000	27.2282
Total	**0.0146**	**0.0526**	**0.1051**	**4.2000e-004**	**0.0353**	**3.0000e-004**	**0.0356**	**9.4500e-003**	**2.9000e-004**	**9.7400e-003**	**0.0000**	**38.8113**	**38.8113**	**1.5800e-003**	**0.0000**	**38.8509**

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	0.6928					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0229	0.1578	0.2031	3.3000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	28.5964	28.5964	1.8600e-003	0.0000	28.6430
Total	**0.7157**	**0.1578**	**0.2031**	**3.3000e-004**		**9.1500e-003**	**9.1500e-003**		**9.1500e-003**	**9.1500e-003**	**0.0000**	**28.5964**	**28.5964**	**1.8600e-003**	**0.0000**	**28.6430**

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	1.2900e-003	0.0435	0.0116	1.2000e-004	2.9700e-003	8.0000e-005	3.0600e-003	8.6000e-004	8.0000e-005	9.4000e-004	0.0000	11.6016	11.6016	8.4000e-004	0.0000	11.6227
Worker	0.0133	9.1200e-003	0.0935	3.0000e-004	0.0323	2.2000e-004	0.0326	8.5900e-003	2.1000e-004	8.8000e-003	0.0000	27.2097	27.2097	7.4000e-004	0.0000	27.2282
Total	**0.0146**	**0.0526**	**0.1051**	**4.2000e-004**	**0.0353**	**3.0000e-004**	**0.0356**	**9.4500e-003**	**2.9000e-004**	**9.7400e-003**	**0.0000**	**38.8113**	**38.8113**	**1.5800e-003**	**0.0000**	**38.8509**

3.10 Paving - 2022

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	0.0193	0.1947	0.2552	4.0000e-004		9.9400e-003	9.9400e-003		9.1400e-003	9.1400e-003	0.0000	35.0482	35.0482	0.0113	0.0000	35.3316
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0193**	**0.1947**	**0.2552**	**4.0000e-004**		**9.9400e-003**	**9.9400e-003**		**9.1400e-003**	**9.1400e-003**	**0.0000**	**35.0482**	**35.0482**	**0.0113**	**0.0000**	**35.3316**

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	2.0000e-004	6.7900e-003	1.8200e-003	2.0000e-005	4.6000e-004	1.0000e-005	4.8000e-004	1.3000e-004	1.0000e-005	1.5000e-004	0.0000	1.8128	1.8128	1.3000e-004	0.0000	1.8160
Worker	9.2000e-004	6.3000e-004	6.4900e-003	2.0000e-005	2.2500e-003	2.0000e-005	2.2600e-003	6.0000e-004	1.0000e-005	6.1000e-004	0.0000	1.8896	1.8896	5.0000e-005	0.0000	1.8909
Total	**1.1200e-003**	**7.4200e-003**	**8.3100e-003**	**4.0000e-005**	**2.7100e-003**	**3.0000e-005**	**2.7400e-003**	**7.3000e-004**	**2.0000e-005**	**7.6000e-004**	**0.0000**	**3.7023**	**3.7023**	**1.8000e-004**	**0.0000**	**3.7069**

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	0.0193	0.1947	0.2552	4.0000e-004		9.9400e-003	9.9400e-003		9.1400e-003	9.1400e-003	0.0000	35.0482	35.0482	0.0113	0.0000	35.3316
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0193**	**0.1947**	**0.2552**	**4.0000e-004**		**9.9400e-003**	**9.9400e-003**		**9.1400e-003**	**9.1400e-003**	**0.0000**	**35.0482**	**35.0482**	**0.0113**	**0.0000**	**35.3316**

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	2.0000e-004	6.7900e-003	1.8200e-003	2.0000e-005	4.6000e-004	1.0000e-005	4.8000e-004	1.3000e-004	1.0000e-005	1.5000e-004	0.0000	1.8128	1.8128	1.3000e-004	0.0000	1.8160
Worker	9.2000e-004	6.3000e-004	6.4900e-003	2.0000e-005	2.2500e-003	2.0000e-005	2.2600e-003	6.0000e-004	1.0000e-005	6.1000e-004	0.0000	1.8896	1.8896	5.0000e-005	0.0000	1.8909
Total	**1.1200e-003**	**7.4200e-003**	**8.3100e-003**	**4.0000e-005**	**2.7100e-003**	**3.0000e-005**	**2.7400e-003**	**7.3000e-004**	**2.0000e-005**	**7.6000e-004**	**0.0000**	**3.7023**	**3.7023**	**1.8000e-004**	**0.0000**	**3.7069**

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	0.3884	1.5571	4.7312	0.0172	1.5785	0.0133	1.5917	0.4227	0.0124	0.4350	0.0000	1,586.5913	1,586.5913	0.0796	0.0000	1,588.5812
Unmitigated	0.3884	1.5571	4.7312	0.0172	1.5785	0.0133	1.5917	0.4227	0.0124	0.4350	0.0000	1,586.5913	1,586.5913	0.0796	0.0000	1,588.5812

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	132.00	179.08	179.08	412,436	412,436
Condo/Townhouse	648.00	659.34	659.34	1,846,630	1,846,630
Enclosed Parking with Elevator	0.00	0.00	0.00		
Hotel	520.00	682.50	682.50	1,606,142	1,606,142
Motel	60.00	81.40	81.40	187,471	187,471
Single Family Housing	48.00	48.00	48.00	136,107	136,107
Total	1,408.00	1,650.32	1,650.32	4,188,786	4,188,786

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	7.79	7.79	7.79	41.00	19.00	40.00	100	0	0
Condo/Townhouse	7.79	7.79	7.79	41.00	19.00	40.00	100	0	0
Enclosed Parking with Elevator	7.79	7.79	7.79	0.00	0.00	0.00	0	0	0
Hotel	7.79	7.79	7.79	19.40	61.60	19.00	100	0	0
Motel	7.79	7.79	7.79	19.00	62.00	19.00	100	0	0
Single Family Housing	7.79	7.79	7.79	41.00	19.00	40.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Condo/Townhouse	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Enclosed Parking with Elevator	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Hotel	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Motel	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Single Family Housing	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	253.8944	253.8944	0.0164	3.4000e-003	255.3176
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	460.6967	460.6967	0.0298	6.1700e-003	463.2792
NaturalGas Mitigated	0.0957	0.8370	0.4911	5.2200e-003		0.0661	0.0661		0.0661	0.0661	0.0000	946.7185	946.7185	0.0182	0.0174	952.3444
NaturalGas Unmitigated	0.0957	0.8370	0.4911	5.2200e-003		0.0661	0.0661		0.0661	0.0661	0.0000	946.7185	946.7185	0.0182	0.0174	952.3444

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	150000	8.1000e-004	6.9100e-003	2.9400e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004	0.0000	8.0046	8.0046	1.5000e-004	1.5000e-004	8.0522
Condo/Townhouse	7.1e+006	0.0383	0.3272	0.1392	2.0900e-003		0.0265	0.0265		0.0265	0.0265	0.0000	378.8830	378.8830	7.2600e-003	6.9500e-003	381.1346
Enclosed Parking with Elevator	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
Hotel	6.56081e+006	0.0354	0.3216	0.2702	1.9300e-003		0.0244	0.0244		0.0244	0.0244	0.0000	350.1097	350.1097	6.7100e-003	6.4200e-003	352.1903
Motel	80026.1	4.3000e-004	3.9200e-003	3.3000e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	4.2705	4.2705	8.0000e-005	8.0000e-005	4.2959
Single Family Housing	3.85e+006	0.0208	0.1774	0.0755	1.1300e-003		0.0143	0.0143		0.0143	0.0143	0.0000	205.4507	205.4507	3.9400e-003	3.7700e-003	206.6716
Total		**0.0957**	**0.8370**	**0.4911**	**5.2100e-003**		**0.0661**	**0.0661**		**0.0661**	**0.0661**	**0.0000**	**946.7185**	**946.7185**	**0.0181**	**0.0174**	**952.3444**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	150000	8.1000e-004	6.9100e-003	2.9400e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004	0.0000	8.0046	8.0046	1.5000e-004	1.5000e-004	8.0522
Condo/Townhouse	7.1e+006	0.0383	0.3272	0.1392	2.0900e-003		0.0265	0.0265		0.0265	0.0265	0.0000	378.8830	378.8830	7.2600e-003	6.9500e-003	381.1346
Enclosed Parking with Elevator	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
Hotel	6.56081e+006	0.0354	0.3216	0.2702	1.9300e-003		0.0244	0.0244		0.0244	0.0244	0.0000	350.1097	350.1097	6.7100e-003	6.4200e-003	352.1903
Motel	80026.1	4.3000e-004	3.9200e-003	3.3000e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	4.2705	4.2705	8.0000e-005	8.0000e-005	4.2959
Single Family Housing	3.85e+006	0.0208	0.1774	0.0755	1.1300e-003		0.0143	0.0143		0.0143	0.0143	0.0000	205.4507	205.4507	3.9400e-003	3.7700e-003	206.6716
Total		**0.0957**	**0.8370**	**0.4911**	**5.2100e-003**		**0.0661**	**0.0661**		**0.0661**	**0.0661**	**0.0000**	**946.7185**	**946.7185**	**0.0181**	**0.0174**	**952.3444**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	69999.8	14.2342	9.2000e-004	1.9000e-004	14.3139
Condo/Townhouse	718000	146.0021	9.4400e-003	1.9500e-003	146.8205
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Hotel	1.23056e+006	250.2294	0.0162	3.3500e-003	251.6321
Motel	69023.4	14.0356	9.1000e-004	1.9000e-004	14.1143
Single Family Housing	178000	36.1955	2.3400e-003	4.8000e-004	36.3984
Total		**460.6967**	**0.0298**	**6.1600e-003**	**463.2792**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	-99500.2	-20.2329	-0.0013	-0.0003	-20.3463
Condo/Townhouse	548500	111.5350	7.2200e-003	1.4900e-003	112.1603
Enclosed Parking with Elevator	-169500	-34.4671	-0.0022	-0.0005	-34.6603
Hotel	1.06106e+006	215.7623	0.0140	2.8900e-003	216.9718
Motel	-100477	-20.4315	-0.0013	-0.0003	-20.5460
Single Family Housing	8500	1.7284	1.1000e-004	2.0000e-005	1.7381
Total		**253.8944**	**0.0164**	**3.4000e-003**	**255.3176**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.5553	0.1289	0.8472	8.1000e-004		0.0141	0.0141		0.0141	0.0141	0.0000	139.9272	139.9272	3.9100e-003	2.5400e-003	140.7823
Unmitigated	1.5553	0.1289	0.8472	8.1000e-004		0.0141	0.0141		0.0141	0.0141	0.0000	139.9272	139.9272	3.9100e-003	2.5400e-003	140.7823

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	0.1277					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.3894					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0140	0.1197	0.0509	7.6000e-004		9.6800e-003	9.6800e-003		9.6800e-003	9.6800e-003	0.0000	138.6264	138.6264	2.6600e-003	2.5400e-003	139.4502
Landscaping	0.0241	9.1700e-003	0.7962	4.0000e-005		4.4000e-003	4.4000e-003		4.4000e-003	4.4000e-003	0.0000	1.3008	1.3008	1.2600e-003	0.0000	1.3322
Total	**1.5553**	**0.1289**	**0.8472**	**8.0000e-004**		**0.0141**	**0.0141**		**0.0141**	**0.0141**	**0.0000**	**139.9272**	**139.9272**	**3.9200e-003**	**2.5400e-003**	**140.7823**

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	0.1277					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.3894					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0140	0.1197	0.0509	7.6000e-004		9.6800e-003	9.6800e-003		9.6800e-003	9.6800e-003	0.0000	138.6264	138.6264	2.6600e-003	2.5400e-003	139.4502
Landscaping	0.0241	9.1700e-003	0.7962	4.0000e-005		4.4000e-003	4.4000e-003		4.4000e-003	4.4000e-003	0.0000	1.3008	1.3008	1.2600e-003	0.0000	1.3322
Total	**1.5553**	**0.1289**	**0.8472**	**8.0000e-004**		**0.0141**	**0.0141**		**0.0141**	**0.0141**	**0.0000**	**139.9272**	**139.9272**	**3.9200e-003**	**2.5400e-003**	**140.7823**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	46.7876	0.0200	0.0115	50.7086
Unmitigated	46.7876	0.0200	0.0115	50.7086

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	0 / 0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	0 / 0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	14.1951 / 1.85029	46.7876	0.0200	0.0115	50.7086
Motel	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**46.7876**	**0.0200**	**0.0115**	**50.7086**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	0 / 0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	0 / 0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	14.1951 / 1.85029	46.7876	0.0200	0.0115	50.7086
Motel	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**46.7876**	**0.0200**	**0.0115**	**50.7086**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	9.4340	0.5575	0.0000	23.3724
Unmitigated	18.8680	1.1151	0.0000	46.7447

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	10.12	2.0543	0.1214	0.0000	5.0894
Condo/Townhouse	37.26	7.5634	0.4470	0.0000	18.7381
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Hotel	35.59	7.2245	0.4270	0.0000	17.8983
Motel	5.47	1.1104	0.0656	0.0000	2.7509
Single Family Housing	4.51	0.9155	0.0541	0.0000	2.2681
Total		**18.8680**	**1.1151**	**0.0000**	**46.7447**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	5.06	1.0271	0.0607	0.0000	2.5447
Condo/Townhouse	18.63	3.7817	0.2235	0.0000	9.3691
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Hotel	17.795	3.6122	0.2135	0.0000	8.9491
Motel	2.735	0.5552	0.0328	0.0000	1.3754
Single Family Housing	2.255	0.4577	0.0271	0.0000	1.1340
Total		**9.4340**	**0.5575**	**0.0000**	**23.3724**

CalEEMod Version: CalEEMod.2016.3.2

Date: 10/16/2019 9:28 AM

Marsol Project
San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	93.34	1000sqft	0.00	93,340.00	0
Hotel	65.00	Room	0.00	131,611.00	0
Motel	10.00	Room	0.00	6,834.00	0
Apartments Low Rise	22.00	Dwelling Unit	0.00	16,174.00	63
Condo/Townhouse	81.00	Dwelling Unit	14.86	171,599.00	232
Single Family Housing	4.00	Dwelling Unit	0.00	28,000.00	11

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2023
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	448.3	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 100% of remaining electricty purchased from CCA or equivalent program

Land Use - Applicant specific information. Total site acreage included in residential uses. User Defined Res = Affordable Housing and Motel = Market Rate Hotel.

Construction Phase - Architectural coating to occur concurrently with building and paving. Demolition concurrent with site preperation.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - For pipeline work.

Off-road Equipment - For pipeline work.

Off-road Equipment - For pipeline work.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Added 2 trenchers for pipeline work.

Trips and VMT - Rounded worker and vendor trips to reflect round trips.

Demolition - Demolition of 5,800 SF building.

Grading - 43,000 CY of soil exported.

Architectural Coating - Del Mar Sustainability Plan

Vehicle Trips - LLG 2019

Woodstoves - No woodstoves or wood burning fireplaces. 166 natural gas fireplaces for hotel and residential uses and 10 fire pits.

Area Coating - Del Mar Sustainability Plan

Energy Use - Glumac 2019

Water And Wastewater - Glumac 2019

Construction Off-road Equipment Mitigation -

Energy Mitigation - 1,017,000 kWh of renewables energy from installation of PVs.

Waste Mitigation - AB 341

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	100
tblAreaCoating	Area_EF_Nonresidential_Interior	250	50
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	50

tblConstructionPhase	NumDays	20.00	413.00
tblConstructionPhase	NumDays	300.00	440.00
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDays	30.00	45.00
tblConstructionPhase	NumDays	30.00	25.00
tblConstructionPhase	NumDays	20.00	25.00
tblConstructionPhase	NumDays	20.00	35.00
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	NumDays	10.00	20.00
tblEnergyUse	LightingElect	810.36	0.00
tblEnergyUse	LightingElect	1,001.10	0.00
tblEnergyUse	LightingElect	1.75	0.00
tblEnergyUse	LightingElect	4.50	3.25
tblEnergyUse	LightingElect	4.50	0.00
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	3,172.76	3,002.07
tblEnergyUse	NT24E	3,795.01	8,363.45
tblEnergyUse	NT24E	0.19	0.00
tblEnergyUse	NT24E	3.67	2.65
tblEnergyUse	NT24E	3.67	4.39
tblEnergyUse	NT24E	6,155.97	41,986.15
tblEnergyUse	NT24NG	4,180.00	1,981.53
tblEnergyUse	NT24NG	4,180.00	25,474.44
tblEnergyUse	NT24NG	11.10	9.48
tblEnergyUse	NT24NG	11.10	2.23
tblEnergyUse	NT24NG	4,180.00	279,725.51
tblEnergyUse	T24E	260.86	179.74
tblEnergyUse	T24E	227.22	500.75
tblEnergyUse	T24E	3.92	0.00
tblEnergyUse	T24E	4.78	3.45
tblEnergyUse	T24E	4.78	5.71

tblEnergyUse	T24E	331.07	2,513.85
tblEnergyUse	T24NG	7,045.49	4,836.66
tblEnergyUse	T24NG	10,202.85	62,179.88
tblEnergyUse	T24NG	47.27	40.37
tblEnergyUse	T24NG	47.27	9.48
tblEnergyUse	T24NG	19,206.92	682,774.49
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	12.10	0.00
tblFireplaces	NumberGas	44.55	176.00
tblFireplaces	NumberGas	2.20	0.00
tblFireplaces	NumberNoFireplace	2.20	0.00
tblFireplaces	NumberNoFireplace	8.10	0.00
tblFireplaces	NumberNoFireplace	0.40	0.00
tblFireplaces	NumberWood	7.70	0.00
tblFireplaces	NumberWood	28.35	0.00
tblFireplaces	NumberWood	1.40	0.00
tblGrading	MaterialExported	0.00	43,000.00
tblLandUse	LandUseSquareFeet	94,380.00	131,611.00
tblLandUse	LandUseSquareFeet	19,602.00	6,834.00
tblLandUse	LandUseSquareFeet	22,000.00	16,174.00
tblLandUse	LandUseSquareFeet	81,000.00	171,599.00
tblLandUse	LandUseSquareFeet	7,200.00	28,000.00
tblLandUse	LotAcreage	2.14	0.00
tblLandUse	LotAcreage	2.17	0.00
tblLandUse	LotAcreage	0.45	0.00
tblLandUse	LotAcreage	1.38	0.00
tblLandUse	LotAcreage	5.06	14.86

tblLandUse	LotAcreage	1.30	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	720.49	448.3
tblTripsAndVMT	HaulingTripNumber	4,252.00	5,376.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	49.00	50.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblTripsAndVMT	WorkerTripNumber	3.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	4.00
tblTripsAndVMT	WorkerTripNumber	8.00	4.00
tblTripsAndVMT	WorkerTripNumber	173.00	174.00
tblTripsAndVMT	WorkerTripNumber	35.00	36.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblVehicleTrips	CC_TL	7.30	7.79
tblVehicleTrips	CC_TL	7.30	7.79
tblVehicleTrips	CC_TL	7.30	7.79
tblVehicleTrips	CNW_TL	7.30	7.79
tblVehicleTrips	CNW_TL	7.30	7.79
tblVehicleTrips	CNW_TL	7.30	7.79
tblVehicleTrips	CW_TL	9.50	7.79
tblVehicleTrips	CW_TL	9.50	7.79
tblVehicleTrips	CW_TL	9.50	7.79
tblVehicleTrips	DV_TP	11.00	0.00

tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	38.00	0.00
tblVehicleTrips	DV_TP	38.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	HO_TL	7.50	7.79
tblVehicleTrips	HO_TL	7.50	7.79
tblVehicleTrips	HO_TL	7.50	7.79
tblVehicleTrips	HO_TTP	39.60	40.00
tblVehicleTrips	HO_TTP	39.60	40.00
tblVehicleTrips	HO_TTP	39.60	40.00
tblVehicleTrips	HS_TL	7.30	7.79
tblVehicleTrips	HS_TL	7.30	7.79
tblVehicleTrips	HS_TL	7.30	7.79
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TL	10.80	7.79
tblVehicleTrips	HW_TL	10.80	7.79
tblVehicleTrips	HW_TL	10.80	7.79
tblVehicleTrips	HW_TTP	41.60	41.00
tblVehicleTrips	HW_TTP	41.60	41.00
tblVehicleTrips	HW_TTP	41.60	41.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	4.00	0.00
tblVehicleTrips	PB_TP	4.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	58.00	100.00
tblVehicleTrips	PR_TP	58.00	100.00

tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	ST_TR	7.16	8.14
tblVehicleTrips	ST_TR	5.67	8.14
tblVehicleTrips	ST_TR	8.19	10.50
tblVehicleTrips	ST_TR	5.63	8.14
tblVehicleTrips	ST_TR	9.91	12.00
tblVehicleTrips	SU_TR	6.07	8.14
tblVehicleTrips	SU_TR	4.84	8.14
tblVehicleTrips	SU_TR	5.95	10.50
tblVehicleTrips	SU_TR	5.63	8.14
tblVehicleTrips	SU_TR	8.62	12.00
tblVehicleTrips	WD_TR	6.59	6.00
tblVehicleTrips	WD_TR	5.81	8.00
tblVehicleTrips	WD_TR	8.17	8.00
tblVehicleTrips	WD_TR	5.63	6.00
tblVehicleTrips	WD_TR	9.52	12.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	IndoorWaterUseRate	1,433,388.56	0.00
tblWater	IndoorWaterUseRate	5,277,476.08	0.00
tblWater	IndoorWaterUseRate	1,648,840.05	14,195,111.73

tblWater	IndoorWaterUseRate	253,667.70	0.00
tblWater	IndoorWaterUseRate	260,616.10	0.00
tblWater	OutdoorWaterUseRate	903,658.01	0.00
tblWater	OutdoorWaterUseRate	3,327,104.48	0.00
tblWater	OutdoorWaterUseRate	183,204.45	1,850,288.27
tblWater	OutdoorWaterUseRate	28,185.30	0.00
tblWater	OutdoorWaterUseRate	164,301.46	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	1.10	0.00
tblWoodstoves	NumberCatalytic	4.05	0.00
tblWoodstoves	NumberCatalytic	0.20	0.00
tblWoodstoves	NumberNoncatalytic	1.10	0.00
tblWoodstoves	NumberNoncatalytic	4.05	0.00
tblWoodstoves	NumberNoncatalytic	0.20	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	7.9754	106.3537	59.9005	0.1951	18.6298	3.8611	22.6893	10.0590	3.5681	13.8256	0.0000	20,065.7799	20,065.7799	3.6188	0.0000	20,156.2487
2021	9.1952	87.4771	45.3515	0.1711	17.3166	2.4826	19.7991	5.7834	2.2874	8.0708	0.0000	17,770.6096	17,770.6096	3.2706	0.0000	17,852.3749
2022	8.9350	22.6510	24.6836	0.0609	2.0907	0.9123	3.0030	0.5628	0.8631	1.4259	0.0000	6,041.8715	6,041.8715	0.7840	0.0000	6,061.4712
Maximum	**9.1952**	**106.3537**	**59.9005**	**0.1951**	**18.6298**	**3.8611**	**22.6893**	**10.0590**	**3.5681**	**13.8256**	**0.0000**	**20,065.7799**	**20,065.7799**	**3.6188**	**0.0000**	**20,156.2487**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	7.9754	106.3537	59.9005	0.1951	8.5874	3.8611	12.6469	4.5810	3.5681	8.3476	0.0000	20,065.7799	20,065.7799	3.6188	0.0000	20,156.2487
2021	9.1952	87.4771	45.3515	0.1711	12.5462	2.4826	15.0288	3.8053	2.2874	6.0927	0.0000	17,770.6096	17,770.6096	3.2706	0.0000	17,852.3749
2022	8.9350	22.6510	24.6836	0.0609	2.0907	0.9123	3.0030	0.5628	0.8631	1.4259	0.0000	6,041.8715	6,041.8715	0.7840	0.0000	6,061.4712
Maximum	**9.1952**	**106.3537**	**59.9005**	**0.1951**	**12.5462**	**3.8611**	**15.0288**	**4.5810**	**3.5681**	**8.3476**	**0.0000**	**20,065.7799**	**20,065.7799**	**3.6188**	**0.0000**	**20,156.2487**

	ROG	NOx	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**	**38.94**	**0.00**	**32.56**	**45.45**	**0.00**	**31.97**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.9225	3.0215	10.0891	0.0191		0.2850	0.2850		0.2850	0.2850	0.0000	3,742.9908	3,742.9908	0.0868	0.0683	3,765.5234
Energy	0.5242	4.5863	2.6909	0.0286		0.3622	0.3622		0.3622	0.3622		5,718.2384	5,718.2384	0.1096	0.1048	5,752.2190
Mobile	2.5221	9.2645	29.9847	0.1101	9.9218	0.0815	10.0033	2.6516	0.0759	2.7274		11,208.3184	11,208.3184	0.5426		11,221.8833
Total	**11.9687**	**16.8723**	**42.7648**	**0.1578**	**9.9218**	**0.7286**	**10.6505**	**2.6516**	**0.7230**	**3.3746**	**0.0000**	**20,669.5475**	**20,669.5475**	**0.7390**	**0.1732**	**20,739.6257**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.9225	3.0215	10.0891	0.0191		0.2850	0.2850		0.2850	0.2850	0.0000	3,742.9908	3,742.9908	0.0868	0.0683	3,765.5234
Energy	0.5242	4.5863	2.6909	0.0286		0.3622	0.3622		0.3622	0.3622		5,718.2384	5,718.2384	0.1096	0.1048	5,752.2190
Mobile	2.5221	9.2645	29.9847	0.1101	9.9218	0.0815	10.0033	2.6516	0.0759	2.7274		11,208.3184	11,208.3184	0.5426		11,221.8833
Total	**11.9687**	**16.8723**	**42.7648**	**0.1578**	**9.9218**	**0.7286**	**10.6505**	**2.6516**	**0.7230**	**3.3746**	**0.0000**	**20,669.5475**	**20,669.5475**	**0.7390**	**0.1732**	**20,739.6257**

	ROG	NOx	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	Demolition	Demolition	10/1/2020	11/11/2020	5	30	
2	Site Preparation	Site Preparation	10/1/2020	11/11/2020	5	30	
3	Pipeline Site Preparation	Site Preparation	11/12/2020	12/9/2020	5	20	For Pipeline
4	Grading	Grading	11/12/2020	1/13/2021	5	45	
5	Pipeline Installation/Backfill	Grading	11/23/2020	12/25/2020	5	25	For Pipeline
6	Pipeline Paving	Paving	12/7/2020	1/8/2021	5	25	For Pipeline
7	Building Construction	Building Construction	1/14/2021	9/21/2022	5	440	
8	Architectural Coating	Architectural Coating	4/13/2021	11/10/2022	5	413	
9	Paving	Paving	9/22/2022	11/9/2022	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 436,940; Residential Outdoor: 145,647; Non-Residential Indoor: 207,668; Non-Residential Outdoor: 69,223; Striped

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	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Pipeline Site Preparation	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Pipeline Installation/Backfill	Excavators	1	8.00	158	0.38
Pipeline Installation/Backfill	Generator Sets	1	8.00	84	0.74
Pipeline Installation/Backfill	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline Paving	Graders	1	8.00	187	0.41
Pipeline Paving	Paving Equipment	1	8.00	132	0.36
Pipeline Paving	Rollers	1	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

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	16.00	0.00	26.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline Site Preparation	1	6.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	4.00	5,376.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline Installation/Backfill	3	4.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline Paving	3	4.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	174.00	50.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	36.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	16.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1927	0.0000	0.1927	0.0292	0.0000	0.0292			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.1927**	**1.6587**	**1.8514**	**0.0292**	**1.5419**	**1.5710**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.8500e-003	0.2418	0.0549	6.8000e-004	0.0151	7.7000e-004	0.0159	4.1500e-003	7.4000e-004	4.8900e-003		74.2150	74.2150	6.5400e-003		74.3784
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0587	0.0396	0.4535	1.3500e-003	0.1314	9.2000e-004	0.1324	0.0349	8.5000e-004	0.0357		134.8395	134.8395	4.0300e-003		134.9402
Total	**0.0656**	**0.2813**	**0.5084**	**2.0300e-003**	**0.1466**	**1.6900e-003**	**0.1483**	**0.0390**	**1.5900e-003**	**0.0406**		**209.0545**	**209.0545**	**0.0106**		**209.3186**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0867	0.0000	0.0867	0.0131	0.0000	0.0131			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.0867**	**1.6587**	**1.7454**	**0.0131**	**1.5419**	**1.5550**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.8500e-003	0.2418	0.0549	6.8000e-004	0.0151	7.7000e-004	0.0159	4.1500e-003	7.4000e-004	4.8900e-003		74.2150	74.2150	6.5400e-003		74.3784
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0587	0.0396	0.4535	1.3500e-003	0.1314	9.2000e-004	0.1324	0.0349	8.5000e-004	0.0357		134.8395	134.8395	4.0300e-003		134.9402
Total	**0.0656**	**0.2813**	**0.5084**	**2.0300e-003**	**0.1466**	**1.6900e-003**	**0.1483**	**0.0390**	**1.5900e-003**	**0.0406**		**209.0545**	**209.0545**	**0.0106**		**209.3186**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0150	0.4510	0.1149	1.1000e-003	0.0271	2.2100e-003	0.0293	7.8000e-003	2.1100e-003	9.9100e-003		117.6160	117.6160	8.6800e-003		117.8330
Worker	0.0661	0.0445	0.5102	1.5200e-003	0.1479	1.0400e-003	0.1489	0.0392	9.6000e-004	0.0402		151.6945	151.6945	4.5300e-003		151.8077
Total	**0.0810**	**0.4955**	**0.6251**	**2.6200e-003**	**0.1750**	**3.2500e-003**	**0.1782**	**0.0470**	**3.0700e-003**	**0.0501**		**269.3105**	**269.3105**	**0.0132**		**269.6407**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**8.1298**	**2.1974**	**10.3272**	**4.4688**	**2.0216**	**6.4904**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0150	0.4510	0.1149	1.1000e-003	0.0271	2.2100e-003	0.0293	7.8000e-003	2.1100e-003	9.9100e-003		117.6160	117.6160	8.6800e-003		117.8330
Worker	0.0661	0.0445	0.5102	1.5200e-003	0.1479	1.0400e-003	0.1489	0.0392	9.6000e-004	0.0402		151.6945	151.6945	4.5300e-003		151.8077
Total	**0.0810**	**0.4955**	**0.6251**	**2.6200e-003**	**0.1750**	**3.2500e-003**	**0.1782**	**0.0470**	**3.0700e-003**	**0.0501**		**269.3105**	**269.3105**	**0.0132**		**269.6407**

3.4 Pipeline Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4182	3.2986	3.6866	6.2600e-003		0.1982	0.1982		0.1982	0.1982		592.6646	592.6646	0.0375		593.6032
Total	**0.4182**	**3.2986**	**3.6866**	**6.2600e-003**	**0.0000**	**0.1982**	**0.1982**	**0.0000**	**0.1982**	**0.1982**		**592.6646**	**592.6646**	**0.0375**		**593.6032**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0220	0.0148	0.1701	5.1000e-004	0.0493	3.5000e-004	0.0496	0.0131	3.2000e-004	0.0134		50.5648	50.5648	1.5100e-003		50.6026
Total	**0.0220**	**0.0148**	**0.1701**	**5.1000e-004**	**0.0493**	**3.5000e-004**	**0.0496**	**0.0131**	**3.2000e-004**	**0.0134**		**50.5648**	**50.5648**	**1.5100e-003**		**50.6026**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4182	3.2986	3.6866	6.2600e-003		0.1982	0.1982		0.1982	0.1982	0.0000	592.6646	592.6646	0.0375		593.6032
Total	**0.4182**	**3.2986**	**3.6866**	**6.2600e-003**	**0.0000**	**0.1982**	**0.1982**	**0.0000**	**0.1982**	**0.1982**	**0.0000**	**592.6646**	**592.6646**	**0.0375**		**593.6032**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0220	0.0148	0.1701	5.1000e-004	0.0493	3.5000e-004	0.0496	0.0131	3.2000e-004	0.0134		50.5648	50.5648	1.5100e-003		50.6026
Total	**0.0220**	**0.0148**	**0.1701**	**5.1000e-004**	**0.0493**	**3.5000e-004**	**0.0496**	**0.0131**	**3.2000e-004**	**0.0134**		**50.5648**	**50.5648**	**1.5100e-003**		**50.6026**

3.5 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.6733**	**2.1739**	**10.8472**	**3.5965**	**2.0000**	**5.5965**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9443	33.3270	7.5669	0.0935	2.4824	0.1063	2.5887	0.6690	0.1017	0.7708		10,230.2491	10,230.2491	0.9011		10,252.7777
Vendor	0.0150	0.4510	0.1149	1.1000e-003	0.0271	2.2100e-003	0.0293	7.8000e-003	2.1100e-003	9.9100e-003		117.6160	117.6160	8.6800e-003		117.8330
Worker	0.0734	0.0495	0.5669	1.6900e-003	0.1643	1.1500e-003	0.1655	0.0436	1.0600e-003	0.0446		168.5494	168.5494	5.0300e-003		168.6752
Total	**1.0326**	**33.8275**	**8.2487**	**0.0963**	**2.6738**	**0.1097**	**2.7835**	**0.7204**	**0.1049**	**0.8253**		**10,516.4146**	**10,516.4146**	**0.9149**		**10,539.2858**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**3.9030**	**2.1739**	**6.0769**	**1.6184**	**2.0000**	**3.6184**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9443	33.3270	7.5669	0.0935	2.4824	0.1063	2.5887	0.6690	0.1017	0.7708		10,230.2491	10,230.2491	0.9011		10,252.7777
Vendor	0.0150	0.4510	0.1149	1.1000e-003	0.0271	2.2100e-003	0.0293	7.8000e-003	2.1100e-003	9.9100e-003		117.6160	117.6160	8.6800e-003		117.8330
Worker	0.0734	0.0495	0.5669	1.6900e-003	0.1643	1.1500e-003	0.1655	0.0436	1.0600e-003	0.0446		168.5494	168.5494	5.0300e-003		168.6752
Total	**1.0326**	**33.8275**	**8.2487**	**0.0963**	**2.6738**	**0.1097**	**2.7835**	**0.7204**	**0.1049**	**0.8253**		**10,516.4146**	**10,516.4146**	**0.9149**		**10,539.2858**

3.5 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8868	30.6232	7.4918	0.0921	8.4055	0.0934	8.4989	2.1229	0.0894	2.2123		10,103.0605	10,103.0605	0.8925		10,125.3719
Vendor	0.0121	0.4073	0.1038	1.0800e-003	0.0271	8.6000e-004	0.0279	7.8000e-003	8.2000e-004	8.6100e-003		116.5408	116.5408	8.3300e-003		116.7490
Worker	0.0692	0.0449	0.5305	1.6300e-003	0.1643	1.1300e-003	0.1654	0.0436	1.0500e-003	0.0446		162.8882	162.8882	4.6500e-003		163.0044
Total	**0.9681**	**31.0755**	**8.1260**	**0.0948**	**8.5968**	**0.0954**	**8.6923**	**2.1742**	**0.0913**	**2.2655**		**10,382.4895**	**10,382.4895**	**0.9054**		**10,405.1252**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**3.9030**	**1.9853**	**5.8883**	**1.6184**	**1.8265**	**3.4449**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8868	30.6232	7.4918	0.0921	8.4055	0.0934	8.4989	2.1229	0.0894	2.2123		10,103.0605	10,103.0605	0.8925		10,125.3719
Vendor	0.0121	0.4073	0.1038	1.0800e-003	0.0271	8.6000e-004	0.0279	7.8000e-003	8.2000e-004	8.6100e-003		116.5408	116.5408	8.3300e-003		116.7490
Worker	0.0692	0.0449	0.5305	1.6300e-003	0.1643	1.1300e-003	0.1654	0.0436	1.0500e-003	0.0446		162.8882	162.8882	4.6500e-003		163.0044
Total	**0.9681**	**31.0755**	**8.1260**	**0.0948**	**8.5968**	**0.0954**	**8.6923**	**2.1742**	**0.0913**	**2.2655**		**10,382.4895**	**10,382.4895**	**0.9054**		**10,405.1252**

3.6 Pipeline Installation/Backfill - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.8535	7.9964	9.2531	0.0149		0.4462	0.4462		0.4262	0.4262		1,423.9215	1,423.9215	0.2941		1,431.2741
Total	**0.8535**	**7.9964**	**9.2531**	**0.0149**	**0.0000**	**0.4462**	**0.4462**	**0.0000**	**0.4262**	**0.4262**		**1,423.9215**	**1,423.9215**	**0.2941**		**1,431.2741**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.4700e-003	0.2255	0.0575	5.5000e-004	0.0135	1.1000e-003	0.0146	3.9000e-003	1.0600e-003	4.9500e-003		58.8080	58.8080	4.3400e-003		58.9165
Worker	0.0147	9.8900e-003	0.1134	3.4000e-004	0.0329	2.3000e-004	0.0331	8.7200e-003	2.1000e-004	8.9300e-003		33.7099	33.7099	1.0100e-003		33.7351
Total	**0.0222**	**0.2354**	**0.1708**	**8.9000e-004**	**0.0464**	**1.3300e-003**	**0.0477**	**0.0126**	**1.2700e-003**	**0.0139**		**92.5179**	**92.5179**	**5.3500e-003**		**92.6515**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.8535	7.9964	9.2531	0.0149		0.4462	0.4462		0.4262	0.4262	0.0000	1,423.9215	1,423.9215	0.2941		1,431.2741
Total	**0.8535**	**7.9964**	**9.2531**	**0.0149**	**0.0000**	**0.4462**	**0.4462**	**0.0000**	**0.4262**	**0.4262**	**0.0000**	**1,423.9215**	**1,423.9215**	**0.2941**		**1,431.2741**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.4700e-003	0.2255	0.0575	5.5000e-004	0.0135	1.1000e-003	0.0146	3.9000e-003	1.0600e-003	4.9500e-003		58.8080	58.8080	4.3400e-003		58.9165
Worker	0.0147	9.8900e-003	0.1134	3.4000e-004	0.0329	2.3000e-004	0.0331	8.7200e-003	2.1000e-004	8.9300e-003		33.7099	33.7099	1.0100e-003		33.7351
Total	**0.0222**	**0.2354**	**0.1708**	**8.9000e-004**	**0.0464**	**1.3300e-003**	**0.0477**	**0.0126**	**1.2700e-003**	**0.0139**		**92.5179**	**92.5179**	**5.3500e-003**		**92.6515**

3.7 Pipeline Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8914	10.5480	6.2422	0.0133		0.4420	0.4420		0.4067	0.4067		1,291.3133	1,291.3133	0.4176		1,301.7542
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8914**	**10.5480**	**6.2422**	**0.0133**		**0.4420**	**0.4420**		**0.4067**	**0.4067**		**1,291.3133**	**1,291.3133**	**0.4176**		**1,301.7542**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.4700e-003	0.2255	0.0575	5.5000e-004	0.0135	1.1000e-003	0.0146	3.9000e-003	1.0600e-003	4.9500e-003		58.8080	58.8080	4.3400e-003		58.9165
Worker	0.0147	9.8900e-003	0.1134	3.4000e-004	0.0329	2.3000e-004	0.0331	8.7200e-003	2.1000e-004	8.9300e-003		33.7099	33.7099	1.0100e-003		33.7351
Total	**0.0222**	**0.2354**	**0.1708**	**8.9000e-004**	**0.0464**	**1.3300e-003**	**0.0477**	**0.0126**	**1.2700e-003**	**0.0139**		**92.5179**	**92.5179**	**5.3500e-003**		**92.6515**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8914	10.5480	6.2422	0.0133		0.4420	0.4420		0.4067	0.4067	0.0000	1,291.3133	1,291.3133	0.4176		1,301.7542
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8914**	**10.5480**	**6.2422**	**0.0133**		**0.4420**	**0.4420**		**0.4067**	**0.4067**	**0.0000**	**1,291.3133**	**1,291.3133**	**0.4176**		**1,301.7542**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.4700e-003	0.2255	0.0575	5.5000e-004	0.0135	1.1000e-003	0.0146	3.9000e-003	1.0600e-003	4.9500e-003		58.8080	58.8080	4.3400e-003		58.9165
Worker	0.0147	9.8900e-003	0.1134	3.4000e-004	0.0329	2.3000e-004	0.0331	8.7200e-003	2.1000e-004	8.9300e-003		33.7099	33.7099	1.0100e-003		33.7351
Total	**0.0222**	**0.2354**	**0.1708**	**8.9000e-004**	**0.0464**	**1.3300e-003**	**0.0477**	**0.0126**	**1.2700e-003**	**0.0139**		**92.5179**	**92.5179**	**5.3500e-003**		**92.6515**

3.7 Pipeline Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8345	9.7891	6.1890	0.0133		0.4012	0.4012		0.3691	0.3691		1,290.2287	1,290.2287	0.4173		1,300.6609
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8345**	**9.7891**	**6.1890**	**0.0133**		**0.4012**	**0.4012**		**0.3691**	**0.3691**		**1,290.2287**	**1,290.2287**	**0.4173**		**1,300.6609**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.0500e-003	0.2037	0.0519	5.4000e-004	0.0135	4.3000e-004	0.0140	3.9000e-003	4.1000e-004	4.3100e-003		58.2704	58.2704	4.1600e-003		58.3745
Worker	0.0138	8.9900e-003	0.1061	3.3000e-004	0.0329	2.3000e-004	0.0331	8.7200e-003	2.1000e-004	8.9200e-003		32.5776	32.5776	9.3000e-004		32.6009
Total	**0.0199**	**0.2127**	**0.1580**	**8.7000e-004**	**0.0464**	**6.6000e-004**	**0.0471**	**0.0126**	**6.2000e-004**	**0.0132**		**90.8480**	**90.8480**	**5.0900e-003**		**90.9754**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8345	9.7891	6.1890	0.0133		0.4012	0.4012		0.3691	0.3691	0.0000	1,290.2287	1,290.2287	0.4173		1,300.6609
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8345**	**9.7891**	**6.1890**	**0.0133**		**0.4012**	**0.4012**		**0.3691**	**0.3691**	**0.0000**	**1,290.2287**	**1,290.2287**	**0.4173**		**1,300.6609**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.0500e-003	0.2037	0.0519	5.4000e-004	0.0135	4.3000e-004	0.0140	3.9000e-003	4.1000e-004	4.3100e-003		58.2704	58.2704	4.1600e-003		58.3745
Worker	0.0138	8.9900e-003	0.1061	3.3000e-004	0.0329	2.3000e-004	0.0331	8.7200e-003	2.1000e-004	8.9200e-003		32.5776	32.5776	9.3000e-004		32.6009
Total	**0.0199**	**0.2127**	**0.1580**	**8.7000e-004**	**0.0464**	**6.6000e-004**	**0.0471**	**0.0126**	**6.2000e-004**	**0.0132**		**90.8480**	**90.8480**	**5.0900e-003**		**90.9754**

3.8 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1512	5.0915	1.2975	0.0135	0.3385	0.0107	0.3492	0.0974	0.0102	0.1077		1,456.7597	1,456.7597	0.1041		1,459.3620
Worker	0.6019	0.3910	4.6152	0.0142	1.4294	9.8700e-003	1.4392	0.3791	9.1000e-003	0.3882		1,417.1271	1,417.1271	0.0404		1,418.1382
Total	**0.7530**	**5.4825**	**5.9127**	**0.0278**	**1.7679**	**0.0206**	**1.7884**	**0.4766**	**0.0193**	**0.4959**		**2,873.8869**	**2,873.8869**	**0.1445**		**2,877.5002**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1512	5.0915	1.2975	0.0135	0.3385	0.0107	0.3492	0.0974	0.0102	0.1077		1,456.7597	1,456.7597	0.1041		1,459.3620
Worker	0.6019	0.3910	4.6152	0.0142	1.4294	9.8700e-003	1.4392	0.3791	9.1000e-003	0.3882		1,417.1271	1,417.1271	0.0404		1,418.1382
Total	**0.7530**	**5.4825**	**5.9127**	**0.0278**	**1.7679**	**0.0206**	**1.7884**	**0.4766**	**0.0193**	**0.4959**		**2,873.8869**	**2,873.8869**	**0.1445**		**2,877.5002**

3.8 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1406	4.8116	1.2289	0.0134	0.3385	9.2000e-003	0.3477	0.0974	8.8000e-003	0.1062		1,443.0689	1,443.0689	0.1009		1,445.5914
Worker	0.5690	0.3566	4.2915	0.0137	1.4294	9.6600e-003	1.4390	0.3791	8.9000e-003	0.3880		1,365.1340	1,365.1340	0.0371		1,366.0608
Total	**0.7096**	**5.1682**	**5.5204**	**0.0271**	**1.7679**	**0.0189**	**1.7867**	**0.4766**	**0.0177**	**0.4943**		**2,808.2028**	**2,808.2028**	**0.1380**		**2,811.6523**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1406	4.8116	1.2289	0.0134	0.3385	9.2000e-003	0.3477	0.0974	8.8000e-003	0.1062		1,443.0689	1,443.0689	0.1009		1,445.5914
Worker	0.5690	0.3566	4.2915	0.0137	1.4294	9.6600e-003	1.4390	0.3791	8.9000e-003	0.3880		1,365.1340	1,365.1340	0.0371		1,366.0608
Total	**0.7096**	**5.1682**	**5.5204**	**0.0271**	**1.7679**	**0.0189**	**1.7867**	**0.4766**	**0.0177**	**0.4943**		**2,808.2028**	**2,808.2028**	**0.1380**		**2,811.6523**

3.9 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.1857					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**6.4046**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0121	0.4073	0.1038	1.0800e-003	0.0271	8.6000e-004	0.0279	7.8000e-003	8.2000e-004	8.6100e-003		116.5408	116.5408	8.3300e-003		116.7490
Worker	0.1245	0.0809	0.9549	2.9400e-003	0.2957	2.0400e-003	0.2978	0.0784	1.8800e-003	0.0803		293.1987	293.1987	8.3700e-003		293.4079
Total	**0.1366**	**0.4882**	**1.0587**	**4.0200e-003**	**0.3228**	**2.9000e-003**	**0.3257**	**0.0862**	**2.7000e-003**	**0.0889**		**409.7395**	**409.7395**	**0.0167**		**410.1569**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.1857					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**6.4046**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0121	0.4073	0.1038	1.0800e-003	0.0271	8.6000e-004	0.0279	7.8000e-003	8.2000e-004	8.6100e-003		116.5408	116.5408	8.3300e-003		116.7490
Worker	0.1245	0.0809	0.9549	2.9400e-003	0.2957	2.0400e-003	0.2978	0.0784	1.8800e-003	0.0803		293.1987	293.1987	8.3700e-003		293.4079
Total	**0.1366**	**0.4882**	**1.0587**	**4.0200e-003**	**0.3228**	**2.9000e-003**	**0.3257**	**0.0862**	**2.7000e-003**	**0.0889**		**409.7395**	**409.7395**	**0.0167**		**410.1569**

3.9 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.1857					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**6.3902**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0113	0.3849	0.0983	1.0700e-003	0.0271	7.4000e-004	0.0278	7.8000e-003	7.0000e-004	8.5000e-003		115.4455	115.4455	8.0700e-003		115.6473
Worker	0.1177	0.0738	0.8879	2.8300e-003	0.2957	2.0000e-003	0.2977	0.0784	1.8400e-003	0.0803		282.4415	282.4415	7.6700e-003		282.6333
Total	**0.1290**	**0.4587**	**0.9862**	**3.9000e-003**	**0.3228**	**2.7400e-003**	**0.3255**	**0.0862**	**2.5400e-003**	**0.0888**		**397.8870**	**397.8870**	**0.0157**		**398.2806**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.1857					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**6.3902**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0113	0.3849	0.0983	1.0700e-003	0.0271	7.4000e-004	0.0278	7.8000e-003	7.0000e-004	8.5000e-003		115.4455	115.4455	8.0700e-003		115.6473
Worker	0.1177	0.0738	0.8879	2.8300e-003	0.2957	2.0000e-003	0.2977	0.0784	1.8400e-003	0.0803		282.4415	282.4415	7.6700e-003		282.6333
Total	**0.1290**	**0.4587**	**0.9862**	**3.9000e-003**	**0.3228**	**2.7400e-003**	**0.3255**	**0.0862**	**2.5400e-003**	**0.0888**		**397.8870**	**397.8870**	**0.0157**		**398.2806**

3.10 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0113	0.3849	0.0983	1.0700e-003	0.0271	7.4000e-004	0.0278	7.8000e-003	7.0000e-004	8.5000e-003		115.4455	115.4455	8.0700e-003		115.6473
Worker	0.0523	0.0328	0.3946	1.2600e-003	0.1314	8.9000e-004	0.1323	0.0349	8.2000e-004	0.0357		125.5296	125.5296	3.4100e-003		125.6148
Total	**0.0636**	**0.4177**	**0.4929**	**2.3300e-003**	**0.1585**	**1.6300e-003**	**0.1601**	**0.0427**	**1.5200e-003**	**0.0442**		**240.9751**	**240.9751**	**0.0115**		**241.2621**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0113	0.3849	0.0983	1.0700e-003	0.0271	7.4000e-004	0.0278	7.8000e-003	7.0000e-004	8.5000e-003		115.4455	115.4455	8.0700e-003		115.6473
Worker	0.0523	0.0328	0.3946	1.2600e-003	0.1314	8.9000e-004	0.1323	0.0349	8.2000e-004	0.0357		125.5296	125.5296	3.4100e-003		125.6148
Total	**0.0636**	**0.4177**	**0.4929**	**2.3300e-003**	**0.1585**	**1.6300e-003**	**0.1601**	**0.0427**	**1.5200e-003**	**0.0442**		**240.9751**	**240.9751**	**0.0115**		**241.2621**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.5221	9.2645	29.9847	0.1101	9.9218	0.0815	10.0033	2.6516	0.0759	2.7274		11,208.3184	11,208.3184	0.5426		11,221.8833
Unmitigated	2.5221	9.2645	29.9847	0.1101	9.9218	0.0815	10.0033	2.6516	0.0759	2.7274		11,208.3184	11,208.3184	0.5426		11,221.8833

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	132.00	179.08	179.08	412,436	412,436
Condo/Townhouse	648.00	659.34	659.34	1,846,630	1,846,630
Enclosed Parking with Elevator	0.00	0.00	0.00		
Hotel	520.00	682.50	682.50	1,606,142	1,606,142
Motel	60.00	81.40	81.40	187,471	187,471
Single Family Housing	48.00	48.00	48.00	136,107	136,107
Total	1,408.00	1,650.32	1,650.32	4,188,786	4,188,786

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	7.79	7.79	7.79	41.00	19.00	40.00	100	0	0
Condo/Townhouse	7.79	7.79	7.79	41.00	19.00	40.00	100	0	0
Enclosed Parking with Elevator	7.79	7.79	7.79	0.00	0.00	0.00	0	0	0
Hotel	7.79	7.79	7.79	19.40	61.60	19.00	100	0	0
Motel	7.79	7.79	7.79	19.00	62.00	19.00	100	0	0
Single Family Housing	7.79	7.79	7.79	41.00	19.00	40.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Condo/Townhouse	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Enclosed Parking with Elevator	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Hotel	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Motel	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Single Family Housing	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.5242	4.5863	2.6909	0.0286		0.3622	0.3622		0.3622	0.3622		5,718.2384	5,718.2384	0.1096	0.1048	5,752.2190
NaturalGas Unmitigated	0.5242	4.5863	2.6909	0.0286		0.3622	0.3622		0.3622	0.3622		5,718.2384	5,718.2384	0.1096	0.1048	5,752.2190

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	410.959	4.4300e-003	0.0379	0.0161	2.4000e-004		3.0600e-003	3.0600e-003		3.0600e-003	3.0600e-003		48.3482	48.3482	9.3000e-004	8.9000e-004	48.6355
Condo/Townhouse	19452.1	0.2098	1.7926	0.7628	0.0114		0.1449	0.1449		0.1449	0.1449		2,288.4770	2,288.4770	0.0439	0.0420	2,302.0763
Enclosed Parking with Elevator	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
Hotel	17974.8	0.1939	1.7622	1.4803	0.0106		0.1339	0.1339		0.1339	0.1339		2,114.6844	2,114.6844	0.0405	0.0388	2,127.2509
Motel	219.25	2.3600e-003	0.0215	0.0181	1.3000e-004		1.6300e-003	1.6300e-003		1.6300e-003	1.6300e-003		25.7941	25.7941	4.9000e-004	4.7000e-004	25.9474
Single Family Housing	10547.9	0.1138	0.9721	0.4136	6.2000e-003		0.0786	0.0786		0.0786	0.0786		1,240.9347	1,240.9347	0.0238	0.0228	1,248.3090
Total		**0.5242**	**4.5863**	**2.6909**	**0.0286**		**0.3622**	**0.3622**		**0.3622**	**0.3622**		**5,718.2384**	**5,718.2384**	**0.1096**	**0.1048**	**5,752.2190**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	0.410959	4.4300e-003	0.0379	0.0161	2.4000e-004		3.0600e-003	3.0600e-003		3.0600e-003	3.0600e-003		48.3482	48.3482	9.3000e-004	8.9000e-004	48.6355
Condo/Townhouse	19.4521	0.2098	1.7926	0.7628	0.0114		0.1449	0.1449		0.1449	0.1449		2,288.4770	2,288.4770	0.0439	0.0420	2,302.0763
Enclosed Parking with Elevator	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
Hotel	17.9748	0.1939	1.7622	1.4803	0.0106		0.1339	0.1339		0.1339	0.1339		2,114.6844	2,114.6844	0.0405	0.0388	2,127.2509
Motel	0.21925	2.3600e-003	0.0215	0.0181	1.3000e-004		1.6300e-003	1.6300e-003		1.6300e-003	1.6300e-003		25.7941	25.7941	4.9000e-004	4.7000e-004	25.9474
Single Family Housing	10.5479	0.1138	0.9721	0.4136	6.2000e-003		0.0786	0.0786		0.0786	0.0786		1,240.9347	1,240.9347	0.0238	0.0228	1,248.3090
Total		**0.5242**	**4.5863**	**2.6909**	**0.0286**		**0.3622**	**0.3622**		**0.3622**	**0.3622**		**5,718.2384**	**5,718.2384**	**0.1096**	**0.1048**	**5,752.2190**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.9225	3.0215	10.0891	0.0191		0.2850	0.2850		0.2850	0.2850	0.0000	3,742.9908	3,742.9908	0.0868	0.0683	3,765.5234
Unmitigated	8.9225	3.0215	10.0891	0.0191		0.2850	0.2850		0.2850	0.2850	0.0000	3,742.9908	3,742.9908	0.0868	0.0683	3,765.5234

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6999					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.6133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3417	2.9195	1.2424	0.0186		0.2361	0.2361		0.2361	0.2361	0.0000	3,727.0588	3,727.0588	0.0714	0.0683	3,749.2069
Landscaping	0.2676	0.1019	8.8468	4.7000e-004		0.0489	0.0489		0.0489	0.0489		15.9319	15.9319	0.0154		16.3165
Total	**8.9225**	**3.0215**	**10.0891**	**0.0191**		**0.2850**	**0.2850**		**0.2850**	**0.2850**	**0.0000**	**3,742.9908**	**3,742.9908**	**0.0868**	**0.0683**	**3,765.5234**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6999					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.6133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3417	2.9195	1.2424	0.0186		0.2361	0.2361		0.2361	0.2361	0.0000	3,727.0588	3,727.0588	0.0714	0.0683	3,749.2069
Landscaping	0.2676	0.1019	8.8468	4.7000e-004		0.0489	0.0489		0.0489	0.0489		15.9319	15.9319	0.0154		16.3165
Total	**8.9225**	**3.0215**	**10.0891**	**0.0191**		**0.2850**	**0.2850**		**0.2850**	**0.2850**	**0.0000**	**3,742.9908**	**3,742.9908**	**0.0868**	**0.0683**	**3,765.5234**

CalEEMod Version: CalEEMod.2016.3.2

Date: 10/16/2019 9:52 AM

Marsol Project
San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	93.34	1000sqft	0.00	93,340.00	0
Hotel	65.00	Room	0.00	131,611.00	0
Motel	10.00	Room	0.00	6,834.00	0
Apartments Low Rise	22.00	Dwelling Unit	0.00	16,174.00	63
Condo/Townhouse	81.00	Dwelling Unit	14.86	171,599.00	232
Single Family Housing	4.00	Dwelling Unit	0.00	28,000.00	11

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2023
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	448.3	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 100% of remaining electricty purchased from CCA or equivalent program

Land Use - Applicant specific information. Total site acreage included in residential uses. User Defined Res = Affordable Housing and Motel = Market Rate Hotel.

Construction Phase - Architectural coating to occur concurrently with building and paving. Demolition concurrent with site preperation.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - For pipeline work.

Off-road Equipment - For pipeline work.

Off-road Equipment - For pipeline work.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Added 2 trenchers for pipeline work.

Trips and VMT - Rounded worker and vendor trips to reflect round trips.

Demolition - Demolition of 5,800 SF building.

Grading - 43,000 CY of soil exported.

Architectural Coating - Del Mar Sustainability Plan

Vehicle Trips - LLG 2019

Woodstoves - No woodstoves or wood burning fireplaces. 166 natural gas fireplaces for hotel and residential uses and 10 fire pits.

Area Coating - Del Mar Sustainability Plan

Energy Use - Glumac 2019

Water And Wastewater - Glumac 2019

Construction Off-road Equipment Mitigation -

Energy Mitigation - 1,017,000 kWh of renewables energy from installation of PVs.

Waste Mitigation - AB 341

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	100
tblAreaCoating	Area_EF_Nonresidential_Interior	250	50
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	50

tblConstructionPhase	NumDays	20.00	413.00
tblConstructionPhase	NumDays	300.00	440.00
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDays	30.00	45.00
tblConstructionPhase	NumDays	30.00	25.00
tblConstructionPhase	NumDays	20.00	25.00
tblConstructionPhase	NumDays	20.00	35.00
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	NumDays	10.00	20.00
tblEnergyUse	LightingElect	810.36	0.00
tblEnergyUse	LightingElect	1,001.10	0.00
tblEnergyUse	LightingElect	1.75	0.00
tblEnergyUse	LightingElect	4.50	3.25
tblEnergyUse	LightingElect	4.50	0.00
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	3,172.76	3,002.07
tblEnergyUse	NT24E	3,795.01	8,363.45
tblEnergyUse	NT24E	0.19	0.00
tblEnergyUse	NT24E	3.67	2.65
tblEnergyUse	NT24E	3.67	4.39
tblEnergyUse	NT24E	6,155.97	41,986.15
tblEnergyUse	NT24NG	4,180.00	1,981.53
tblEnergyUse	NT24NG	4,180.00	25,474.44
tblEnergyUse	NT24NG	11.10	9.48
tblEnergyUse	NT24NG	11.10	2.23
tblEnergyUse	NT24NG	4,180.00	279,725.51
tblEnergyUse	T24E	260.86	179.74
tblEnergyUse	T24E	227.22	500.75
tblEnergyUse	T24E	3.92	0.00
tblEnergyUse	T24E	4.78	3.45
tblEnergyUse	T24E	4.78	5.71

tblEnergyUse	T24E	331.07	2,513.85
tblEnergyUse	T24NG	7,045.49	4,836.66
tblEnergyUse	T24NG	10,202.85	62,179.88
tblEnergyUse	T24NG	47.27	40.37
tblEnergyUse	T24NG	47.27	9.48
tblEnergyUse	T24NG	19,206.92	682,774.49
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	12.10	0.00
tblFireplaces	NumberGas	44.55	176.00
tblFireplaces	NumberGas	2.20	0.00
tblFireplaces	NumberNoFireplace	2.20	0.00
tblFireplaces	NumberNoFireplace	8.10	0.00
tblFireplaces	NumberNoFireplace	0.40	0.00
tblFireplaces	NumberWood	7.70	0.00
tblFireplaces	NumberWood	28.35	0.00
tblFireplaces	NumberWood	1.40	0.00
tblGrading	MaterialExported	0.00	43,000.00
tblLandUse	LandUseSquareFeet	94,380.00	131,611.00
tblLandUse	LandUseSquareFeet	19,602.00	6,834.00
tblLandUse	LandUseSquareFeet	22,000.00	16,174.00
tblLandUse	LandUseSquareFeet	81,000.00	171,599.00
tblLandUse	LandUseSquareFeet	7,200.00	28,000.00
tblLandUse	LotAcreage	2.14	0.00
tblLandUse	LotAcreage	2.17	0.00
tblLandUse	LotAcreage	0.45	0.00
tblLandUse	LotAcreage	1.38	0.00
tblLandUse	LotAcreage	5.06	14.86

tblLandUse	LotAcreage	1.30	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	720.49	448.3
tblTripsAndVMT	HaulingTripNumber	4,252.00	5,376.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	49.00	50.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblTripsAndVMT	WorkerTripNumber	3.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	4.00
tblTripsAndVMT	WorkerTripNumber	8.00	4.00
tblTripsAndVMT	WorkerTripNumber	173.00	174.00
tblTripsAndVMT	WorkerTripNumber	35.00	36.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblVehicleTrips	CC_TL	7.30	7.79
tblVehicleTrips	CC_TL	7.30	7.79
tblVehicleTrips	CC_TL	7.30	7.79
tblVehicleTrips	CNW_TL	7.30	7.79
tblVehicleTrips	CNW_TL	7.30	7.79
tblVehicleTrips	CNW_TL	7.30	7.79
tblVehicleTrips	CW_TL	9.50	7.79
tblVehicleTrips	CW_TL	9.50	7.79
tblVehicleTrips	CW_TL	9.50	7.79
tblVehicleTrips	DV_TP	11.00	0.00

tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	38.00	0.00
tblVehicleTrips	DV_TP	38.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	HO_TL	7.50	7.79
tblVehicleTrips	HO_TL	7.50	7.79
tblVehicleTrips	HO_TL	7.50	7.79
tblVehicleTrips	HO_TTP	39.60	40.00
tblVehicleTrips	HO_TTP	39.60	40.00
tblVehicleTrips	HO_TTP	39.60	40.00
tblVehicleTrips	HS_TL	7.30	7.79
tblVehicleTrips	HS_TL	7.30	7.79
tblVehicleTrips	HS_TL	7.30	7.79
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TL	10.80	7.79
tblVehicleTrips	HW_TL	10.80	7.79
tblVehicleTrips	HW_TL	10.80	7.79
tblVehicleTrips	HW_TTP	41.60	41.00
tblVehicleTrips	HW_TTP	41.60	41.00
tblVehicleTrips	HW_TTP	41.60	41.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	4.00	0.00
tblVehicleTrips	PB_TP	4.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	58.00	100.00
tblVehicleTrips	PR_TP	58.00	100.00

tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	ST_TR	7.16	8.14
tblVehicleTrips	ST_TR	5.67	8.14
tblVehicleTrips	ST_TR	8.19	10.50
tblVehicleTrips	ST_TR	5.63	8.14
tblVehicleTrips	ST_TR	9.91	12.00
tblVehicleTrips	SU_TR	6.07	8.14
tblVehicleTrips	SU_TR	4.84	8.14
tblVehicleTrips	SU_TR	5.95	10.50
tblVehicleTrips	SU_TR	5.63	8.14
tblVehicleTrips	SU_TR	8.62	12.00
tblVehicleTrips	WD_TR	6.59	6.00
tblVehicleTrips	WD_TR	5.81	8.00
tblVehicleTrips	WD_TR	8.17	8.00
tblVehicleTrips	WD_TR	5.63	6.00
tblVehicleTrips	WD_TR	9.52	12.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	IndoorWaterUseRate	1,433,388.56	0.00
tblWater	IndoorWaterUseRate	5,277,476.08	0.00
tblWater	IndoorWaterUseRate	1,648,840.05	14,195,111.73

tblWater	IndoorWaterUseRate	253,667.70	0.00
tblWater	IndoorWaterUseRate	260,616.10	0.00
tblWater	OutdoorWaterUseRate	903,658.01	0.00
tblWater	OutdoorWaterUseRate	3,327,104.48	0.00
tblWater	OutdoorWaterUseRate	183,204.45	1,850,288.27
tblWater	OutdoorWaterUseRate	28,185.30	0.00
tblWater	OutdoorWaterUseRate	164,301.46	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	1.10	0.00
tblWoodstoves	NumberCatalytic	4.05	0.00
tblWoodstoves	NumberCatalytic	0.20	0.00
tblWoodstoves	NumberNoncatalytic	1.10	0.00
tblWoodstoves	NumberNoncatalytic	4.05	0.00
tblWoodstoves	NumberNoncatalytic	0.20	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	7.9957	106.6838	60.3706	0.1932	18.6298	3.8611	22.6894	10.0590	3.5682	13.8256	0.0000	19,866.6572	19,866.6572	3.6502	0.0000	19,957.9134
2021	9.3013	87.7462	45.8026	0.1693	17.3166	2.4846	19.8012	5.7834	2.2894	8.0727	0.0000	17,579.5621	17,579.5621	3.3004	0.0000	17,662.0721
2022	9.0372	22.6860	24.5127	0.0595	2.0907	0.9127	3.0034	0.5628	0.8635	1.4263	0.0000	5,900.4395	5,900.4395	0.7881	0.0000	5,920.1416
Maximum	**9.3013**	**106.6838**	**60.3706**	**0.1932**	**18.6298**	**3.8611**	**22.6894**	**10.0590**	**3.5682**	**13.8256**	**0.0000**	**19,866.6572**	**19,866.6572**	**3.6502**	**0.0000**	**19,957.9134**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	7.9957	106.6838	60.3706	0.1932	8.5874	3.8611	12.6469	4.5810	3.5682	8.3477	0.0000	19,866.6572	19,866.6572	3.6502	0.0000	19,957.9134
2021	9.3013	87.7462	45.8026	0.1693	12.5462	2.4846	15.0308	3.8053	2.2894	6.0947	0.0000	17,579.5621	17,579.5621	3.3004	0.0000	17,662.0721
2022	9.0372	22.6860	24.5127	0.0595	2.0907	0.9127	3.0034	0.5628	0.8635	1.4263	0.0000	5,900.4395	5,900.4395	0.7881	0.0000	5,920.1416
Maximum	**9.3013**	**106.6838**	**60.3706**	**0.1932**	**12.5462**	**3.8611**	**15.0308**	**4.5810**	**3.5682**	**8.3477**	**0.0000**	**19,866.6572**	**19,866.6572**	**3.6502**	**0.0000**	**19,957.9134**

	ROG	NOx	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**	**38.94**	**0.00**	**32.56**	**45.45**	**0.00**	**31.97**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.9225	3.0215	10.0891	0.0191		0.2850	0.2850		0.2850	0.2850	0.0000	3,742.9908	3,742.9908	0.0868	0.0683	3,765.5234
Energy	0.5242	4.5863	2.6909	0.0286		0.3622	0.3622		0.3622	0.3622		5,718.2384	5,718.2384	0.1096	0.1048	5,752.2190
Mobile	2.4408	9.5398	29.3145	0.1045	9.9218	0.0819	10.0037	2.6516	0.0763	2.7278		10,635.5549	10,635.5549	0.5437		10,649.1464
Total	**11.8875**	**17.1476**	**42.0945**	**0.1522**	**9.9218**	**0.7290**	**10.6509**	**2.6516**	**0.7234**	**3.3750**	**0.0000**	**20,096.7840**	**20,096.7840**	**0.7401**	**0.1732**	**20,166.8887**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.9225	3.0215	10.0891	0.0191		0.2850	0.2850		0.2850	0.2850	0.0000	3,742.9908	3,742.9908	0.0868	0.0683	3,765.5234
Energy	0.5242	4.5863	2.6909	0.0286		0.3622	0.3622		0.3622	0.3622		5,718.2384	5,718.2384	0.1096	0.1048	5,752.2190
Mobile	2.4408	9.5398	29.3145	0.1045	9.9218	0.0819	10.0037	2.6516	0.0763	2.7278		10,635.5549	10,635.5549	0.5437		10,649.1464
Total	**11.8875**	**17.1476**	**42.0945**	**0.1522**	**9.9218**	**0.7290**	**10.6509**	**2.6516**	**0.7234**	**3.3750**	**0.0000**	**20,096.7840**	**20,096.7840**	**0.7401**	**0.1732**	**20,166.8887**

	ROG	NOx	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	Demolition	Demolition	10/1/2020	11/11/2020	5	30	
2	Site Preparation	Site Preparation	10/1/2020	11/11/2020	5	30	
3	Pipeline Site Preparation	Site Preparation	11/12/2020	12/9/2020	5	20	For Pipeline
4	Grading	Grading	11/12/2020	1/13/2021	5	45	
5	Pipeline Installation/Backfill	Grading	11/23/2020	12/25/2020	5	25	For Pipeline
6	Pipeline Paving	Paving	12/7/2020	1/8/2021	5	25	For Pipeline
7	Building Construction	Building Construction	1/14/2021	9/21/2022	5	440	
8	Architectural Coating	Architectural Coating	4/13/2021	11/10/2022	5	413	
9	Paving	Paving	9/22/2022	11/9/2022	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 436,940; Residential Outdoor: 145,647; Non-Residential Indoor: 207,668; Non-Residential Outdoor: 69,223; Striped

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	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Pipeline Site Preparation	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Pipeline Installation/Backfill	Excavators	1	8.00	158	0.38
Pipeline Installation/Backfill	Generator Sets	1	8.00	84	0.74
Pipeline Installation/Backfill	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline Paving	Graders	1	8.00	187	0.41
Pipeline Paving	Paving Equipment	1	8.00	132	0.36
Pipeline Paving	Rollers	1	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

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	16.00	0.00	26.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline Site Preparation	1	6.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	4.00	5,376.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline Installation/Backfill	3	4.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline Paving	3	4.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	174.00	50.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	36.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	16.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1927	0.0000	0.1927	0.0292	0.0000	0.0292			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.1927**	**1.6587**	**1.8514**	**0.0292**	**1.5419**	**1.5710**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.0400e-003	0.2441	0.0585	6.7000e-004	0.0151	7.9000e-004	0.0159	4.1500e-003	7.5000e-004	4.9000e-003		72.9417	72.9417	6.7600e-003		73.1108
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0665	0.0444	0.4276	1.2700e-003	0.1314	9.2000e-004	0.1324	0.0349	8.5000e-004	0.0357		126.5811	126.5811	3.8100e-003		126.6764
Total	**0.0735**	**0.2885**	**0.4861**	**1.9400e-003**	**0.1466**	**1.7100e-003**	**0.1483**	**0.0390**	**1.6000e-003**	**0.0406**		**199.5229**	**199.5229**	**0.0106**		**199.7872**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0867	0.0000	0.0867	0.0131	0.0000	0.0131			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.0867**	**1.6587**	**1.7454**	**0.0131**	**1.5419**	**1.5550**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.0400e-003	0.2441	0.0585	6.7000e-004	0.0151	7.9000e-004	0.0159	4.1500e-003	7.5000e-004	4.9000e-003		72.9417	72.9417	6.7600e-003		73.1108
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0665	0.0444	0.4276	1.2700e-003	0.1314	9.2000e-004	0.1324	0.0349	8.5000e-004	0.0357		126.5811	126.5811	3.8100e-003		126.6764
Total	**0.0735**	**0.2885**	**0.4861**	**1.9400e-003**	**0.1466**	**1.7100e-003**	**0.1483**	**0.0390**	**1.6000e-003**	**0.0406**		**199.5229**	**199.5229**	**0.0106**		**199.7872**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0157	0.4507	0.1275	1.0700e-003	0.0271	2.2500e-003	0.0293	7.8000e-003	2.1500e-003	9.9500e-003		114.5849	114.5849	9.2200e-003		114.8154
Worker	0.0748	0.0500	0.4810	1.4300e-003	0.1479	1.0400e-003	0.1489	0.0392	9.6000e-004	0.0402		142.4038	142.4038	4.2900e-003		142.5109
Total	**0.0905**	**0.5006**	**0.6086**	**2.5000e-003**	**0.1750**	**3.2900e-003**	**0.1782**	**0.0470**	**3.1100e-003**	**0.0501**		**256.9886**	**256.9886**	**0.0135**		**257.3263**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**8.1298**	**2.1974**	**10.3272**	**4.4688**	**2.0216**	**6.4904**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0157	0.4507	0.1275	1.0700e-003	0.0271	2.2500e-003	0.0293	7.8000e-003	2.1500e-003	9.9500e-003		114.5849	114.5849	9.2200e-003		114.8154
Worker	0.0748	0.0500	0.4810	1.4300e-003	0.1479	1.0400e-003	0.1489	0.0392	9.6000e-004	0.0402		142.4038	142.4038	4.2900e-003		142.5109
Total	**0.0905**	**0.5006**	**0.6086**	**2.5000e-003**	**0.1750**	**3.2900e-003**	**0.1782**	**0.0470**	**3.1100e-003**	**0.0501**		**256.9886**	**256.9886**	**0.0135**		**257.3263**

3.4 Pipeline Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4182	3.2986	3.6866	6.2600e-003		0.1982	0.1982		0.1982	0.1982		592.6646	592.6646	0.0375		593.6032
Total	**0.4182**	**3.2986**	**3.6866**	**6.2600e-003**	**0.0000**	**0.1982**	**0.1982**	**0.0000**	**0.1982**	**0.1982**		**592.6646**	**592.6646**	**0.0375**		**593.6032**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0249	0.0167	0.1604	4.8000e-004	0.0493	3.5000e-004	0.0496	0.0131	3.2000e-004	0.0134		47.4679	47.4679	1.4300e-003		47.5037
Total	**0.0249**	**0.0167**	**0.1604**	**4.8000e-004**	**0.0493**	**3.5000e-004**	**0.0496**	**0.0131**	**3.2000e-004**	**0.0134**		**47.4679**	**47.4679**	**1.4300e-003**		**47.5037**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4182	3.2986	3.6866	6.2600e-003		0.1982	0.1982		0.1982	0.1982	0.0000	592.6646	592.6646	0.0375		593.6032
Total	**0.4182**	**3.2986**	**3.6866**	**6.2600e-003**	**0.0000**	**0.1982**	**0.1982**	**0.0000**	**0.1982**	**0.1982**	**0.0000**	**592.6646**	**592.6646**	**0.0375**		**593.6032**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0249	0.0167	0.1604	4.8000e-004	0.0493	3.5000e-004	0.0496	0.0131	3.2000e-004	0.0134		47.4679	47.4679	1.4300e-003		47.5037
Total	**0.0249**	**0.0167**	**0.1604**	**4.8000e-004**	**0.0493**	**3.5000e-004**	**0.0496**	**0.0131**	**3.2000e-004**	**0.0134**		**47.4679**	**47.4679**	**1.4300e-003**		**47.5037**

3.5 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.6733**	**2.1739**	**10.8472**	**3.5965**	**2.0000**	**5.5965**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9705	33.6475	8.0668	0.0919	2.4824	0.1085	2.5909	0.6690	0.1039	0.7729		10,054.7379	10,054.7379	0.9320		10,078.0379
Vendor	0.0157	0.4507	0.1275	1.0700e-003	0.0271	2.2500e-003	0.0293	7.8000e-003	2.1500e-003	9.9500e-003		114.5849	114.5849	9.2200e-003		114.8154
Worker	0.0831	0.0555	0.5345	1.5900e-003	0.1643	1.1500e-003	0.1655	0.0436	1.0600e-003	0.0446		158.2264	158.2264	4.7600e-003		158.3455
Total	**1.0692**	**34.1537**	**8.7288**	**0.0946**	**2.6738**	**0.1119**	**2.7857**	**0.7204**	**0.1071**	**0.8275**		**10,327.5492**	**10,327.5492**	**0.9460**		**10,351.1988**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**3.9030**	**2.1739**	**6.0769**	**1.6184**	**2.0000**	**3.6184**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9705	33.6475	8.0668	0.0919	2.4824	0.1085	2.5909	0.6690	0.1039	0.7729		10,054.7379	10,054.7379	0.9320		10,078.0379
Vendor	0.0157	0.4507	0.1275	1.0700e-003	0.0271	2.2500e-003	0.0293	7.8000e-003	2.1500e-003	9.9500e-003		114.5849	114.5849	9.2200e-003		114.8154
Worker	0.0831	0.0555	0.5345	1.5900e-003	0.1643	1.1500e-003	0.1655	0.0436	1.0600e-003	0.0446		158.2264	158.2264	4.7600e-003		158.3455
Total	**1.0692**	**34.1537**	**8.7288**	**0.0946**	**2.6738**	**0.1119**	**2.7857**	**0.7204**	**0.1071**	**0.8275**		**10,327.5492**	**10,327.5492**	**0.9460**		**10,351.1988**

3.5 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9113	30.8874	7.9634	0.0905	8.4055	0.0954	8.5009	2.1229	0.0913	2.2142		9,928.5070	9,928.5070	0.9218		9,951.5514
Vendor	0.0128	0.4062	0.1156	1.0600e-003	0.0271	8.9000e-004	0.0280	7.8000e-003	8.5000e-004	8.6500e-003		113.5277	113.5277	8.8400e-003		113.7488
Worker	0.0785	0.0505	0.4987	1.5300e-003	0.1643	1.1300e-003	0.1654	0.0436	1.0500e-003	0.0446		152.9095	152.9095	4.3900e-003		153.0193
Total	**1.0025**	**31.3441**	**8.5776**	**0.0931**	**8.5968**	**0.0974**	**8.6943**	**2.1742**	**0.0932**	**2.2674**		**10,194.9442**	**10,194.9442**	**0.9350**		**10,218.3196**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**3.9030**	**1.9853**	**5.8883**	**1.6184**	**1.8265**	**3.4449**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9113	30.8874	7.9634	0.0905	8.4055	0.0954	8.5009	2.1229	0.0913	2.2142		9,928.5070	9,928.5070	0.9218		9,951.5514
Vendor	0.0128	0.4062	0.1156	1.0600e-003	0.0271	8.9000e-004	0.0280	7.8000e-003	8.5000e-004	8.6500e-003		113.5277	113.5277	8.8400e-003		113.7488
Worker	0.0785	0.0505	0.4987	1.5300e-003	0.1643	1.1300e-003	0.1654	0.0436	1.0500e-003	0.0446		152.9095	152.9095	4.3900e-003		153.0193
Total	**1.0025**	**31.3441**	**8.5776**	**0.0931**	**8.5968**	**0.0974**	**8.6943**	**2.1742**	**0.0932**	**2.2674**		**10,194.9442**	**10,194.9442**	**0.9350**		**10,218.3196**

3.6 Pipeline Installation/Backfill - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.8535	7.9964	9.2531	0.0149		0.4462	0.4462		0.4262	0.4262		1,423.9215	1,423.9215	0.2941		1,431.2741
Total	**0.8535**	**7.9964**	**9.2531**	**0.0149**	**0.0000**	**0.4462**	**0.4462**	**0.0000**	**0.4262**	**0.4262**		**1,423.9215**	**1,423.9215**	**0.2941**		**1,431.2741**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.8300e-003	0.2253	0.0638	5.3000e-004	0.0135	1.1200e-003	0.0147	3.9000e-003	1.0800e-003	4.9700e-003		57.2924	57.2924	4.6100e-003		57.4077
Worker	0.0166	0.0111	0.1069	3.2000e-004	0.0329	2.3000e-004	0.0331	8.7200e-003	2.1000e-004	8.9300e-003		31.6453	31.6453	9.5000e-004		31.6691
Total	**0.0245**	**0.2364**	**0.1707**	**8.5000e-004**	**0.0464**	**1.3500e-003**	**0.0478**	**0.0126**	**1.2900e-003**	**0.0139**		**88.9377**	**88.9377**	**5.5600e-003**		**89.0768**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.8535	7.9964	9.2531	0.0149		0.4462	0.4462		0.4262	0.4262	0.0000	1,423.9215	1,423.9215	0.2941		1,431.2741
Total	**0.8535**	**7.9964**	**9.2531**	**0.0149**	**0.0000**	**0.4462**	**0.4462**	**0.0000**	**0.4262**	**0.4262**	**0.0000**	**1,423.9215**	**1,423.9215**	**0.2941**		**1,431.2741**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.8300e-003	0.2253	0.0638	5.3000e-004	0.0135	1.1200e-003	0.0147	3.9000e-003	1.0800e-003	4.9700e-003		57.2924	57.2924	4.6100e-003		57.4077
Worker	0.0166	0.0111	0.1069	3.2000e-004	0.0329	2.3000e-004	0.0331	8.7200e-003	2.1000e-004	8.9300e-003		31.6453	31.6453	9.5000e-004		31.6691
Total	**0.0245**	**0.2364**	**0.1707**	**8.5000e-004**	**0.0464**	**1.3500e-003**	**0.0478**	**0.0126**	**1.2900e-003**	**0.0139**		**88.9377**	**88.9377**	**5.5600e-003**		**89.0768**

3.7 Pipeline Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8914	10.5480	6.2422	0.0133		0.4420	0.4420		0.4067	0.4067		1,291.3133	1,291.3133	0.4176		1,301.7542
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8914**	**10.5480**	**6.2422**	**0.0133**		**0.4420**	**0.4420**		**0.4067**	**0.4067**		**1,291.3133**	**1,291.3133**	**0.4176**		**1,301.7542**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.8300e-003	0.2253	0.0638	5.3000e-004	0.0135	1.1200e-003	0.0147	3.9000e-003	1.0800e-003	4.9700e-003		57.2924	57.2924	4.6100e-003		57.4077
Worker	0.0166	0.0111	0.1069	3.2000e-004	0.0329	2.3000e-004	0.0331	8.7200e-003	2.1000e-004	8.9300e-003		31.6453	31.6453	9.5000e-004		31.6691
Total	**0.0245**	**0.2364**	**0.1707**	**8.5000e-004**	**0.0464**	**1.3500e-003**	**0.0478**	**0.0126**	**1.2900e-003**	**0.0139**		**88.9377**	**88.9377**	**5.5600e-003**		**89.0768**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8914	10.5480	6.2422	0.0133		0.4420	0.4420		0.4067	0.4067	0.0000	1,291.3133	1,291.3133	0.4176		1,301.7542
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8914**	**10.5480**	**6.2422**	**0.0133**		**0.4420**	**0.4420**		**0.4067**	**0.4067**	**0.0000**	**1,291.3133**	**1,291.3133**	**0.4176**		**1,301.7542**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.8300e-003	0.2253	0.0638	5.3000e-004	0.0135	1.1200e-003	0.0147	3.9000e-003	1.0800e-003	4.9700e-003		57.2924	57.2924	4.6100e-003		57.4077
Worker	0.0166	0.0111	0.1069	3.2000e-004	0.0329	2.3000e-004	0.0331	8.7200e-003	2.1000e-004	8.9300e-003		31.6453	31.6453	9.5000e-004		31.6691
Total	**0.0245**	**0.2364**	**0.1707**	**8.5000e-004**	**0.0464**	**1.3500e-003**	**0.0478**	**0.0126**	**1.2900e-003**	**0.0139**		**88.9377**	**88.9377**	**5.5600e-003**		**89.0768**

3.7 Pipeline Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8345	9.7891	6.1890	0.0133		0.4012	0.4012		0.3691	0.3691		1,290.2287	1,290.2287	0.4173		1,300.6609
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8345**	**9.7891**	**6.1890**	**0.0133**		**0.4012**	**0.4012**		**0.3691**	**0.3691**		**1,290.2287**	**1,290.2287**	**0.4173**		**1,300.6609**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.3700e-003	0.2031	0.0578	5.3000e-004	0.0135	4.5000e-004	0.0140	3.9000e-003	4.3000e-004	4.3200e-003		56.7639	56.7639	4.4200e-003		56.8744
Worker	0.0157	0.0101	0.0997	3.1000e-004	0.0329	2.3000e-004	0.0331	8.7200e-003	2.1000e-004	8.9200e-003		30.5819	30.5819	8.8000e-004		30.6039
Total	**0.0221**	**0.2132**	**0.1575**	**8.4000e-004**	**0.0464**	**6.8000e-004**	**0.0471**	**0.0126**	**6.4000e-004**	**0.0132**		**87.3458**	**87.3458**	**5.3000e-003**		**87.4783**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8345	9.7891	6.1890	0.0133		0.4012	0.4012		0.3691	0.3691	0.0000	1,290.2287	1,290.2287	0.4173		1,300.6609
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8345**	**9.7891**	**6.1890**	**0.0133**		**0.4012**	**0.4012**		**0.3691**	**0.3691**	**0.0000**	**1,290.2287**	**1,290.2287**	**0.4173**		**1,300.6609**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.3700e-003	0.2031	0.0578	5.3000e-004	0.0135	4.5000e-004	0.0140	3.9000e-003	4.3000e-004	4.3200e-003		56.7639	56.7639	4.4200e-003		56.8744
Worker	0.0157	0.0101	0.0997	3.1000e-004	0.0329	2.3000e-004	0.0331	8.7200e-003	2.1000e-004	8.9200e-003		30.5819	30.5819	8.8000e-004		30.6039
Total	**0.0221**	**0.2132**	**0.1575**	**8.4000e-004**	**0.0464**	**6.8000e-004**	**0.0471**	**0.0126**	**6.4000e-004**	**0.0132**		**87.3458**	**87.3458**	**5.3000e-003**		**87.4783**

3.8 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1594	5.0779	1.4447	0.0132	0.3385	0.0111	0.3496	0.0974	0.0106	0.1081		1,419.0965	1,419.0965	0.1106		1,421.8603
Worker	0.6825	0.4389	4.3383	0.0134	1.4294	9.8700e-003	1.4392	0.3791	9.1000e-003	0.3882		1,330.3128	1,330.3128	0.0382		1,331.2683
Total	**0.8419**	**5.5168**	**5.7830**	**0.0266**	**1.7679**	**0.0210**	**1.7889**	**0.4766**	**0.0197**	**0.4963**		**2,749.4093**	**2,749.4093**	**0.1488**		**2,753.1286**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1594	5.0779	1.4447	0.0132	0.3385	0.0111	0.3496	0.0974	0.0106	0.1081		1,419.0965	1,419.0965	0.1106		1,421.8603
Worker	0.6825	0.4389	4.3383	0.0134	1.4294	9.8700e-003	1.4392	0.3791	9.1000e-003	0.3882		1,330.3128	1,330.3128	0.0382		1,331.2683
Total	**0.8419**	**5.5168**	**5.7830**	**0.0266**	**1.7679**	**0.0210**	**1.7889**	**0.4766**	**0.0197**	**0.4963**		**2,749.4093**	**2,749.4093**	**0.1488**		**2,753.1286**

3.8 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1483	4.7954	1.3679	0.0131	0.3385	9.5900e-003	0.3481	0.0974	9.1700e-003	0.1066		1,405.5131	1,405.5131	0.1070		1,408.1886
Worker	0.6468	0.4001	4.0255	0.0129	1.4294	9.6600e-003	1.4390	0.3791	8.9000e-003	0.3880		1,281.5545	1,281.5545	0.0350		1,282.4293
Total	**0.7950**	**5.1955**	**5.3934**	**0.0259**	**1.7679**	**0.0193**	**1.7871**	**0.4766**	**0.0181**	**0.4946**		**2,687.0676**	**2,687.0676**	**0.1420**		**2,690.6179**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1483	4.7954	1.3679	0.0131	0.3385	9.5900e-003	0.3481	0.0974	9.1700e-003	0.1066		1,405.5131	1,405.5131	0.1070		1,408.1886
Worker	0.6468	0.4001	4.0255	0.0129	1.4294	9.6600e-003	1.4390	0.3791	8.9000e-003	0.3880		1,281.5545	1,281.5545	0.0350		1,282.4293
Total	**0.7950**	**5.1955**	**5.3934**	**0.0259**	**1.7679**	**0.0193**	**1.7871**	**0.4766**	**0.0181**	**0.4946**		**2,687.0676**	**2,687.0676**	**0.1420**		**2,690.6179**

3.9 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.1857					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**6.4046**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0128	0.4062	0.1156	1.0600e-003	0.0271	8.9000e-004	0.0280	7.8000e-003	8.5000e-004	8.6500e-003		113.5277	113.5277	8.8400e-003		113.7488
Worker	0.1412	0.0908	0.8976	2.7600e-003	0.2957	2.0400e-003	0.2978	0.0784	1.8800e-003	0.0803		275.2371	275.2371	7.9100e-003		275.4348
Total	**0.1540**	**0.4970**	**1.0132**	**3.8200e-003**	**0.3228**	**2.9300e-003**	**0.3257**	**0.0862**	**2.7300e-003**	**0.0890**		**388.7649**	**388.7649**	**0.0168**		**389.1836**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.1857					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**6.4046**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0128	0.4062	0.1156	1.0600e-003	0.0271	8.9000e-004	0.0280	7.8000e-003	8.5000e-004	8.6500e-003		113.5277	113.5277	8.8400e-003		113.7488
Worker	0.1412	0.0908	0.8976	2.7600e-003	0.2957	2.0400e-003	0.2978	0.0784	1.8800e-003	0.0803		275.2371	275.2371	7.9100e-003		275.4348
Total	**0.1540**	**0.4970**	**1.0132**	**3.8200e-003**	**0.3228**	**2.9300e-003**	**0.3257**	**0.0862**	**2.7300e-003**	**0.0890**		**388.7649**	**388.7649**	**0.0168**		**389.1836**

3.9 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.1857					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**6.3902**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0119	0.3836	0.1094	1.0400e-003	0.0271	7.7000e-004	0.0279	7.8000e-003	7.3000e-004	8.5300e-003		112.4411	112.4411	8.5600e-003		112.6551
Worker	0.1338	0.0828	0.8329	2.6600e-003	0.2957	2.0000e-003	0.2977	0.0784	1.8400e-003	0.0803		265.1492	265.1492	7.2400e-003		265.3302
Total	**0.1457**	**0.4664**	**0.9423**	**3.7000e-003**	**0.3228**	**2.7700e-003**	**0.3256**	**0.0862**	**2.5700e-003**	**0.0888**		**377.5903**	**377.5903**	**0.0158**		**377.9853**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.1857					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**6.3902**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0119	0.3836	0.1094	1.0400e-003	0.0271	7.7000e-004	0.0279	7.8000e-003	7.3000e-004	8.5300e-003		112.4411	112.4411	8.5600e-003		112.6551
Worker	0.1338	0.0828	0.8329	2.6600e-003	0.2957	2.0000e-003	0.2977	0.0784	1.8400e-003	0.0803		265.1492	265.1492	7.2400e-003		265.3302
Total	**0.1457**	**0.4664**	**0.9423**	**3.7000e-003**	**0.3228**	**2.7700e-003**	**0.3256**	**0.0862**	**2.5700e-003**	**0.0888**		**377.5903**	**377.5903**	**0.0158**		**377.9853**

3.10 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0119	0.3836	0.1094	1.0400e-003	0.0271	7.7000e-004	0.0279	7.8000e-003	7.3000e-004	8.5300e-003		112.4411	112.4411	8.5600e-003		112.6551
Worker	0.0595	0.0368	0.3702	1.1800e-003	0.1314	8.9000e-004	0.1323	0.0349	8.2000e-004	0.0357		117.8441	117.8441	3.2200e-003		117.9245
Total	**0.0713**	**0.4204**	**0.4796**	**2.2200e-003**	**0.1585**	**1.6600e-003**	**0.1602**	**0.0427**	**1.5500e-003**	**0.0442**		**230.2851**	**230.2851**	**0.0118**		**230.5796**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0119	0.3836	0.1094	1.0400e-003	0.0271	7.7000e-004	0.0279	7.8000e-003	7.3000e-004	8.5300e-003		112.4411	112.4411	8.5600e-003		112.6551
Worker	0.0595	0.0368	0.3702	1.1800e-003	0.1314	8.9000e-004	0.1323	0.0349	8.2000e-004	0.0357		117.8441	117.8441	3.2200e-003		117.9245
Total	**0.0713**	**0.4204**	**0.4796**	**2.2200e-003**	**0.1585**	**1.6600e-003**	**0.1602**	**0.0427**	**1.5500e-003**	**0.0442**		**230.2851**	**230.2851**	**0.0118**		**230.5796**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.4408	9.5398	29.3145	0.1045	9.9218	0.0819	10.0037	2.6516	0.0763	2.7278		10,635.5549	10,635.5549	0.5437		10,649.1464
Unmitigated	2.4408	9.5398	29.3145	0.1045	9.9218	0.0819	10.0037	2.6516	0.0763	2.7278		10,635.5549	10,635.5549	0.5437		10,649.1464

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	132.00	179.08	179.08	412,436	412,436
Condo/Townhouse	648.00	659.34	659.34	1,846,630	1,846,630
Enclosed Parking with Elevator	0.00	0.00	0.00		
Hotel	520.00	682.50	682.50	1,606,142	1,606,142
Motel	60.00	81.40	81.40	187,471	187,471
Single Family Housing	48.00	48.00	48.00	136,107	136,107
Total	1,408.00	1,650.32	1,650.32	4,188,786	4,188,786

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	7.79	7.79	7.79	41.00	19.00	40.00	100	0	0
Condo/Townhouse	7.79	7.79	7.79	41.00	19.00	40.00	100	0	0
Enclosed Parking with Elevator	7.79	7.79	7.79	0.00	0.00	0.00	0	0	0
Hotel	7.79	7.79	7.79	19.40	61.60	19.00	100	0	0
Motel	7.79	7.79	7.79	19.00	62.00	19.00	100	0	0
Single Family Housing	7.79	7.79	7.79	41.00	19.00	40.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Condo/Townhouse	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Enclosed Parking with Elevator	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Hotel	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Motel	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Single Family Housing	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.5242	4.5863	2.6909	0.0286		0.3622	0.3622		0.3622	0.3622		5,718.2384	5,718.2384	0.1096	0.1048	5,752.2190
NaturalGas Unmitigated	0.5242	4.5863	2.6909	0.0286		0.3622	0.3622		0.3622	0.3622		5,718.2384	5,718.2384	0.1096	0.1048	5,752.2190

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	410.959	4.4300e-003	0.0379	0.0161	2.4000e-004		3.0600e-003	3.0600e-003		3.0600e-003	3.0600e-003		48.3482	48.3482	9.3000e-004	8.9000e-004	48.6355
Condo/Townhouse	19452.1	0.2098	1.7926	0.7628	0.0114		0.1449	0.1449		0.1449	0.1449		2,288.4770	2,288.4770	0.0439	0.0420	2,302.0763
Enclosed Parking with Elevator	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
Hotel	17974.8	0.1939	1.7622	1.4803	0.0106		0.1339	0.1339		0.1339	0.1339		2,114.6844	2,114.6844	0.0405	0.0388	2,127.2509
Motel	219.25	2.3600e-003	0.0215	0.0181	1.3000e-004		1.6300e-003	1.6300e-003		1.6300e-003	1.6300e-003		25.7941	25.7941	4.9000e-004	4.7000e-004	25.9474
Single Family Housing	10547.9	0.1138	0.9721	0.4136	6.2000e-003		0.0786	0.0786		0.0786	0.0786		1,240.9347	1,240.9347	0.0238	0.0228	1,248.3090
Total		**0.5242**	**4.5863**	**2.6909**	**0.0286**		**0.3622**	**0.3622**		**0.3622**	**0.3622**		**5,718.2384**	**5,718.2384**	**0.1096**	**0.1048**	**5,752.2190**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	0.410959	4.4300e-003	0.0379	0.0161	2.4000e-004		3.0600e-003	3.0600e-003		3.0600e-003	3.0600e-003		48.3482	48.3482	9.3000e-004	8.9000e-004	48.6355
Condo/Townhouse	19.4521	0.2098	1.7926	0.7628	0.0114		0.1449	0.1449		0.1449	0.1449		2,288.4770	2,288.4770	0.0439	0.0420	2,302.0763
Enclosed Parking with Elevator	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
Hotel	17.9748	0.1939	1.7622	1.4803	0.0106		0.1339	0.1339		0.1339	0.1339		2,114.6844	2,114.6844	0.0405	0.0388	2,127.2509
Motel	0.21925	2.3600e-003	0.0215	0.0181	1.3000e-004		1.6300e-003	1.6300e-003		1.6300e-003	1.6300e-003		25.7941	25.7941	4.9000e-004	4.7000e-004	25.9474
Single Family Housing	10.5479	0.1138	0.9721	0.4136	6.2000e-003		0.0786	0.0786		0.0786	0.0786		1,240.9347	1,240.9347	0.0238	0.0228	1,248.3090
Total		**0.5242**	**4.5863**	**2.6909**	**0.0286**		**0.3622**	**0.3622**		**0.3622**	**0.3622**		**5,718.2384**	**5,718.2384**	**0.1096**	**0.1048**	**5,752.2190**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.9225	3.0215	10.0891	0.0191		0.2850	0.2850		0.2850	0.2850	0.0000	3,742.9908	3,742.9908	0.0868	0.0683	3,765.5234
Unmitigated	8.9225	3.0215	10.0891	0.0191		0.2850	0.2850		0.2850	0.2850	0.0000	3,742.9908	3,742.9908	0.0868	0.0683	3,765.5234

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6999					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.6133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3417	2.9195	1.2424	0.0186		0.2361	0.2361		0.2361	0.2361	0.0000	3,727.0588	3,727.0588	0.0714	0.0683	3,749.2069
Landscaping	0.2676	0.1019	8.8468	4.7000e-004		0.0489	0.0489		0.0489	0.0489		15.9319	15.9319	0.0154		16.3165
Total	**8.9225**	**3.0215**	**10.0891**	**0.0191**		**0.2850**	**0.2850**		**0.2850**	**0.2850**	**0.0000**	**3,742.9908**	**3,742.9908**	**0.0868**	**0.0683**	**3,765.5234**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6999					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.6133					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3417	2.9195	1.2424	0.0186		0.2361	0.2361		0.2361	0.2361	0.0000	3,727.0588	3,727.0588	0.0714	0.0683	3,749.2069
Landscaping	0.2676	0.1019	8.8468	4.7000e-004		0.0489	0.0489		0.0489	0.0489		15.9319	15.9319	0.0154		16.3165
Total	**8.9225**	**3.0215**	**10.0891**	**0.0191**		**0.2850**	**0.2850**		**0.2850**	**0.2850**	**0.0000**	**3,742.9908**	**3,742.9908**	**0.0868**	**0.0683**	**3,765.5234**

APPENDIX B

CO Hot Spot Analysis

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION

JOB: Hwy101_VDLV 2035
RUN: STANDARD RUN (WORST CASE ANGLE)
POLLUTANT: CO

I. SITE VARIABLES

U=	1.0 M/S	Z0=	100. CM	ALT=	18.3 (M)
BRG=	WORST CASE	VD=	0.0 CM/S		
CLAS=	7 (G)	VS=	0.0 CM/S		
MIXH=	1000. M	AMB=	2.4 PPM		
SIGTH=	10. DEGREES	TEMP=	5.1 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)
A. Via de la Va	500	36	30	36	AG	250	2.6	0.0	33.0
B. Via de la Va	500	18	-30	18	AG	245	2.6	0.0	33.0
C. Via de la Va	500	-12	-18	-12	AG	620	2.6	0.0	33.0
D. Via de la Va	-30	18	-500	18	AG	328	2.6	0.0	33.0
E. Via de la Va	-500	-12	30	-12	AG	21	2.6	0.0	33.0
F. Via de la Va	-500	-54	-18	-54	AG	273	2.6	0.0	33.0
G. Via de la Va	0	-36	500	-36	AG	47	2.6	0.0	33.0
H. Via de la Va	12	-500	12	18	AG	793	2.6	0.0	33.0
I. Hwy 101 NBLA	30	-500	30	-12	AG	57	2.6	0.0	33.0
J. Hwy 101 NBT	42	-500	42	-36	AG	810	2.6	0.0	33.0
K. Hwy 101 NBRA	30	-12	30	500	AG	170	2.6	0.0	33.0
L. Hwy 101 NBD	0	500	0	-36	AG	1451	2.6	0.0	33.0
M. Hwy 101 SBLA	-18	500	-18	-12	AG	350	2.6	0.0	33.0
N. Hwy 101 SBTA	-30	500	-30	18	AG	620	2.6	0.0	33.0
O. Hwy 101 SBRA	-18	-12	-18	-500	AG	26	2.6	0.0	33.0
P. Hwy 101 SBD	-500	-36	0	-36	AG	917	2.6	0.0	33.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. SR1	-60	50	5.9
2. SR2	60	70	5.9
3. SR3	-50	-80	5.9
4. SR4	70	-70	5.9

JOB: Hwy101_VDLV 2035
RUN: STANDARD RUN (WORST CASE ANGLE)
POLLUTANT: CO

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SR1	135.	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
2. SR2	220.	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3. SR3	11.	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4. SR4	315.	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. SR1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
2. SR2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
3. SR3	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1
4. SR4	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION

JOB: JDB_VDLV
RUN: STANDARD RUN (WORST CASE ANGLE)
POLLUTANT: CO

I. SITE VARIABLES

U=	1.0 M/S	Z0=	100. CM	ALT=	4.6 (M)
BRG=	WORST CASE	VD=	0.0 CM/S		
CLAS=	7 (G)	VS=	0.0 CM/S		
MIXH=	1000. M	AMB=	2.4 PPM		
SIGTH=	10. DEGREES	TEMP=	5.1 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (FT)	W (FT)
A. Via de la Va	*	500	36	30	36	* AG	82	2.6	0.0	33.0
B. Via de la Va	*	500	18	-30	18	* AG	649	2.6	0.0	33.0
C. Via de la Va	*	500	-12	-18	-12	* AG	61	2.6	0.0	33.0
D. Via de la Va	*	-30	18	-500	18	* AG	1649	2.6	0.0	33.0
E. Via de la Va	*	-500	-12	30	-12	* AG	580	2.6	0.0	33.0
F. Via de la Va	*	-500	-54	-18	-54	* AG	791	2.6	0.0	33.0
G. Via de la Va	*	0	-36	500	-36	* AG	540	2.6	0.0	33.0
H. Via de la Va	*	12	-500	12	18	* AG	1134	2.6	0.0	33.0
I. Jimmy Durant	*	30	-500	30	-12	* AG	251	2.6	0.0	33.0
J. Jimmy Durant	*	42	-500	42	-36	* AG	300	2.6	0.0	33.0
K. Jimmy Durant	*	30	-12	30	500	* AG	480	2.6	0.0	33.0
L. Jimmy Durant	*	0	500	0	-36	* AG	922	2.6	0.0	33.0
M. Jimmy Durant	*	-18	500	-18	-12	* AG	520	2.6	0.0	33.0
N. Jimmy Durant	*	-30	500	-30	18	* AG	150	2.6	0.0	33.0
O. Jimmy Durant	*	-18	-12	-18	-500	* AG	92	2.6	0.0	33.0
P. Jimmy Durant	*	-500	-36	0	-36	* AG	791	2.6	0.0	33.0

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (FT) X	Y	Z
1. SR1	*	-60	50	5.9
2. SR2	*	60	70	5.9
3. SR3	*	-50	-80	5.9
4. SR4	*	70	-70	5.9

JOB: JDB_VDLV
RUN: STANDARD RUN (WORST CASE ANGLE)
POLLUTANT: CO

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SR1	139.	2.8	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
2. SR2	251.	2.8	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
3. SR3	12.	2.8	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
4. SR4	284.	2.8	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. SR1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
2. SR2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
3. SR3	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1
4. SR4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION

JOB: Scedros_VDLV
RUN: STANDARD RUN (WORST CASE ANGLE)
POLLUTANT: CO

I. SITE VARIABLES

U=	1.0 M/S	Z0=	100. CM	ALT=	20.4 (M)
BRG=	WORST CASE	VD=	0.0 CM/S		
CLAS=	7 (G)	VS=	0.0 CM/S		
MIXH=	1000. M	AMB=	2.4 PPM		
SIGTH=	10. DEGREES	TEMP=	5.1 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (FT)	W (FT)
A. Via de la Va	*	500	36	30	36	* AG	1013	2.6	0.0	33.0
B. Via de la Va	*	500	18	-30	18	* AG	150	2.6	0.0	33.0
C. Via de la Va	*	500	-12	-18	-12	* AG	1085	2.6	0.0	33.0
D. Via de la Va	*	-30	18	-500	18	* AG	52	2.6	0.0	33.0
E. Via de la Va	*	-500	-12	30	-12	* AG	721	2.6	0.0	33.0
F. Via de la Va	*	0	-36	500	-36	* AG	881	2.6	0.0	33.0
G. S. Cedros NB	*	30	-12	30	500	* AG	202	2.6	0.0	33.0
H. S. Cedros SB	*	0	500	0	-36	* AG	160	2.6	0.0	33.0
I. S. Cedros SB	*	-30	500	-30	18	* AG	72	2.6	0.0	33.0
J. S. Cedros SB	*	-18	-12	-18	-500	* AG	0	2.6	0.0	33.0

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (FT) X	Y	Z
1. SR1	*	-60	50	5.9
2. SR2	*	60	70	5.9
3. SR3	*	-50	-80	5.9
4. SR4	*	70	-70	5.9

JOB: Scedros_VDLV
RUN: STANDARD RUN (WORST CASE ANGLE)
POLLUTANT: CO

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SR1	100.	2.7	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2. SR2	110.	2.7	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
3. SR3	72.	2.7	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0
4. SR4	69.	2.7	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0

RECEPTOR	CONC/LINK (PPM) I	J
1. SR1	0.0	0.0
2. SR2	0.0	0.0
3. SR3	0.0	0.0
4. SR4	0.0	0.0

APPENDIX C

Renewable Energy Generation Calculation

Marisol Project
Renewable Energy Generation Calculations

Table 1
Solar Photovoltaics

Land Use	Electricity Generation		Emission Factors			Emissions Reduced
			CO2	CH4	N20	CO2e
	kWh/year	MWh/yr	lb/MWh			MT/year
Hotel	270,000	270.00	448.3	0.029	0.0006	55.13
Villas	678,000	678.00	448.3	0.029	0.0006	138.44
Market Rate Hotel	69,000	69.00	448.3	0.029	0.0006	14.09
					Total	**207.65**

Marisol Project
Renewable Energy Generation Calculations

Table 2
Solar Hot Water - Greenhouse Gas Emissions

Land Use	Therms/ year	mmBTU/ year	Emission Factor			CO2e
			CO2 lb/MMBTU	CH4 lb/MMBTU	N2O lb/MMBTU	MT/year
Domestic Hot Water	16,000	1,600	117.65	0.00	0.00	86.05
Pool Heating	0	-	117.65	0.00	0.00	0.00
					Total	**86.05**

Table 3
Solar Hot Water - Criteria Air Pollutants

Land Use	Therms/ year	mmBTU/ day	ROG	NOx	CO	SO2	PM10	PM2.5
			lb/MMBTU	lb/MMBTU	lb/MMBTU	lb/MMBTU	lb/MMBTU	lb/MMBTU
		Emission Factor	*0.01*	*0.10*	*0.08*	*0.00*	*0.01*	*0.01*
Domestic Hot Water	16,000	4.38	0.05	0.43	0.36	0.00	0.03	0.03
Pool Heating	0	-	0.00	0.00	0.00	0.00	0.00	0.00
		Total	0.05	0.43	0.36	0.00	0.03	0.03

APPENDIX D

Efficiency Metric Calculations

Series 13 Forcasts and Interpolation

	2020	2035
Res Population	4,399	4,672
Employment	4,542	4,704
Total (Service Population)	*8,941*	*9,376*

Source: SANDAG 2013

Calculated Linear Population Growth

Year	Pop
2020	8,941
2021	8,970
2022	8,999
2023	9,028
2024	9,057
2025	9,086
2026	9,115
2027	9,144
2028	9,173
2029	9,202
2030	9,231
2031	9,260
2032	9,289
2033	9,318
2034	9,347
2035	9,376

Emissions Reduction Targets

Target Metric	Horizon Year	
	2020	2035
Reduction Percent (from baseline)	15%	50%
Emissions Goals (MT CO_2E)	47,477	27,928

Source: City of Del Mar 2016

Calculated Linear Emissions Targets

Year	MT CO_2E
2020	47,477
2021	46,174
2022	44,870
2023	43,567
2024	42,264
2025	40,961
2026	39,657
2027	38,354
2028	37,051
2029	35,748
2030	34,444
2031	33,141
2032	31,838
2033	30,535
2034	29,231
2035	27,928

Service Population Threshold by Operational Year

Year	Threshold
2020	5.31
2021	5.15
2022	4.99
2023	4.83
2024	4.67
2025	4.51
2026	4.35
2027	4.19
2028	4.04
2029	3.88
2030	3.73
2031	3.58
2032	3.43
2033	3.28
2034	3.13
2035	2.98

Appendix D
Efficiency Metric Calculations

Calculated Linear Emissions based on

Year	MT CO_2E
2020	47,477
2021	45,008
2022	42,668
2023	40,449
2024	38,346
2025	36,352
2026	34,461
2027	32,669
2028	30,971
2029	29,360
2030	27,833
2031	26,386
2032	25,014
2033	23,713
2034	22,480
2035	21,311

Service Population Threshold by

Year	Threshold
2020	5.31
2021	5.02
2022	4.74
2023	4.48
2024	4.23
2025	4.00
2026	3.78
2027	3.57
2028	3.38
2029	3.19
2030	3.02
2031	2.85
2032	2.69
2033	2.54
2034	2.41
2035	2.27