Costa Verde Center Revitalization Project
Environmental Impact Report
SCH No. 2016071031; Project No. 477943

Appendix C

Air Quality Technical Report

September 2020

HELIX
Environmental Planning

Costa Verde Center Revitalization Project

Air Quality Technical Report

August 2020 | RCE-03

Prepared for:

Regency Centers
420 Stevens Avenue, Suite 320
Solana Beach, CA 92075

Prepared by:

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

This page intentionally left blank

Costa Verde Center Revitalization Project

Air Quality Technical Report

Prepared for:

Regency Centers
420 Stevens Avenue, Suite 320
Solana Beach, Ca 92075

Prepared by:

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

~~January~~ August 2020 | RCE-03

This page intentionally left blank

TABLE OF CONTENTS

Section **Page**

TABLE OF CONTENTS (cont.)

LIST OF APPENDICES

LIST OF FIGURES

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

ADT	average daily trips
AMSL	above mean sea level
APN	Assessor's Parcel Number
AQIA	Air Quality Impact Assessment
BACT	best available control technology
BMPs	Best Management Practices
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEQA	California Environmental Quality Act
CO	carbon monoxide
CVSP	Costa Verde Specific Plan
DPM	diesel particulate matter
g/L	grams per liter
H_2S	hydrogen sulfide
HRA	health risk assessment
HVAC	heating, ventilation, and air conditioning
LLG	Linscott, Law & Greenspan Engineers
LOS	Level of Service
MEI	maximally exposed individual
mph	miles per hour
NAAQS	National Ambient Air Quality Standards
NO	nitrogen oxide
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
O_3	ozone
Pb	lead
perc	perchloroethylene

ACRONYMS AND ABBREVIATIONS (cont.)

PM	particulate matter
PM_{10}	particulate matter less than 10 microns
$PM_{2.5}$	particulate matter less than 2.5 microns
RAQS	Regional Air Quality Strategy
ROG	reactive organic gas
SANDAG	San Diego Association of Governments
SCAQMD	South Coast Air Quality Management District
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SF	square foot/feet
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
TAC	toxic air contaminant
UCP	University Community Plan
USEPA	U.S. Environmental Protection Agency
VMT	vehicle miles traveled
VOC	volatile organic compound

EXECUTIVE SUMMARY

This report presents an assessment of potential air quality impacts during construction and operation of the proposed Costa Verde Center Revitalization Project (project), located in the City of San Diego.

The project would result in emissions of air pollutants during both the construction phase and operational phase of the project. Construction best management practices (BMPs) would be implemented as part of the project, including measures to minimize fugitive dust control emissions, such as watering twice per day during grading and stabilizing storage piles. The project would comply with San Diego Air Pollution Control District (SDAPCD) Rule 55, which requires that no visible dust is emitted beyond the property line for a period or periods aggregating more than 3 minutes in any 60-minute period, and would incorporate measures to minimize the track-out/carry-out of visible roadway dust. The project also would require the construction fleet to use any combination of diesel catalytic converters, diesel oxidation catalysts, and diesel particulate filters as well as California Air Resources Board (CARB)/U.S. Environmental Protection Agency (USEPA) Engine Certification Tier 4, or other equivalent methods approved by the CARB. With the inclusion of these BMPs, emissions of all criteria pollutants would be below the daily thresholds during construction, and short-term construction impacts would be less than significant.

Operational emissions associated with the project would include vehicular traffic and area sources such as energy use, landscaping, and the use of consumer products. The project would incorporate energy-efficiency features that would meet the 2019 California Title 24 Energy Efficiency Standards. Criteria pollutant emissions would not exceed the daily screening level thresholds during project operation.

Development of the project would be consistent with the SDAPCD Regional Air Quality Strategy (RAQS) and also would not result in cumulatively considerable emissions of nonattainment air pollutants that would exceed the screening level thresholds.

Project-generated traffic would not result in a carbon monoxide (CO) hot spot. Construction and operation of the project also would not result in exposure of sensitive receptors to significant quantities of toxic air contaminants (TACs). In addition, evaluation of potential odors from the project indicated that associated impacts would be less than significant.

This page intentionally left blank

1.0 INTRODUCTION

1.1 PROJECT LOCATION

The Costa Verde Center Revitalization Project (project) is located at the northwest corner of the intersection of Genesee Avenue and Nobel Drive in the University City community of the City of San Diego (City) in western San Diego County (see Figure 1, *Regional Location,* and Figure 2*, Project Vicinity*). The project site consists of a 13.2-acre property on Assessor's Parcel Numbers (APNs) 345-210-12, -13, and -14. The property is within the Costa Verde Specific Plan (CVSP) area, which designates the project site for neighborhood and community commercial uses. The existing base zone for the project site is RS-1-14 (single-family residential).

1.2 PROJECT DESCRIPTION

The project entails the reconfiguration and expansion of the existing Costa Verde Center (Figure 3, *Existing Site Plan*) to create a local, walkable hub that provides neighborhood services, retail shops, restaurants, office/research/development uses, a hotel, and community gathering spaces. The project proposes to retain the current amount (approximately 178,000 square feet [SF]) of commercial/retail uses, add approximately 400,000 SF of commercial/office uses, and re-designate an approximately one-acre portion of the project site to Visitor Commercial to reintroduce a hotel use to the CVSP area (Figure 4, *Conceptual Site Plan*). A 200-room hotel would serve residents, visitors, and the community's research, business, and educational hub. The hotel would be up to 10 stories in height and would encompass approximately 125,000 SF. The maximum building heights would be 45 feet for commercial/retail structures, 120 feet for commercial/office uses, and 135 feet for the hotel.

The northern portion of the center sits approximately 14 feet higher in elevation (approximately 360 feet above mean sea level [AMSL]) than the southern portion of the site (approximately 350 feet AMSL, to approximately 335 feet AMSL). A uniform podium level of approximately 360 feet AMSL would be established across the entire site to provide a more cohesive experience and facilitate mobility throughout the site. The majority of parking would be provided beneath this podium level. At the southern portion of the site, some commercial/retail structures would be located at an elevation similar to the existing ground elevation, but lower than the podium level, due to the difference in elevation across the site.

The northern portion of the center would consist of a pedestrian-oriented promenade. The promenade would extend from a gateway entry at Genesee Avenue and Esplanade Court to a circular style cul-de-sac and a central thoroughfare. It would be lined with retail, restaurant, and office buildings, as well as a central lawn and gathering area, outdoor seating and dining areas, decorative planters, site furniture, landscaping, and accent paving (Figure 5, *Landscape Plan*). Elevators and stairs would provide connections to the Westfield UTC Trolley Station.

The southern portion of the center would be oriented around a surface parking lot. This area is intended for essential neighborhood services, such as a grocery store, pharmacy, and banks. Landscaping and sidewalks would be provided.

1.3 CONSTRUCTION BEST MANAGEMENT PRACTICES

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

1) **Airborne Dust Beyond the Property Line:** No person shall engage in construction or demolition activity subject to this rule in a manner that discharges visible dust emissions into the atmosphere beyond the property line for a period or periods aggregating more than 3 minutes in any 60-minute period.

2) **Track-Out/Carry-Out:** Visible roadway dust as a result of active operations, spillage from transport trucks, erosion, or track-out/carry-out shall:

    a) be minimized by the use of any of the following or equally effective trackout/carry-out and erosion control measures that apply to the project or operation:

        i) track-out grates or gravel beds at each egress point,

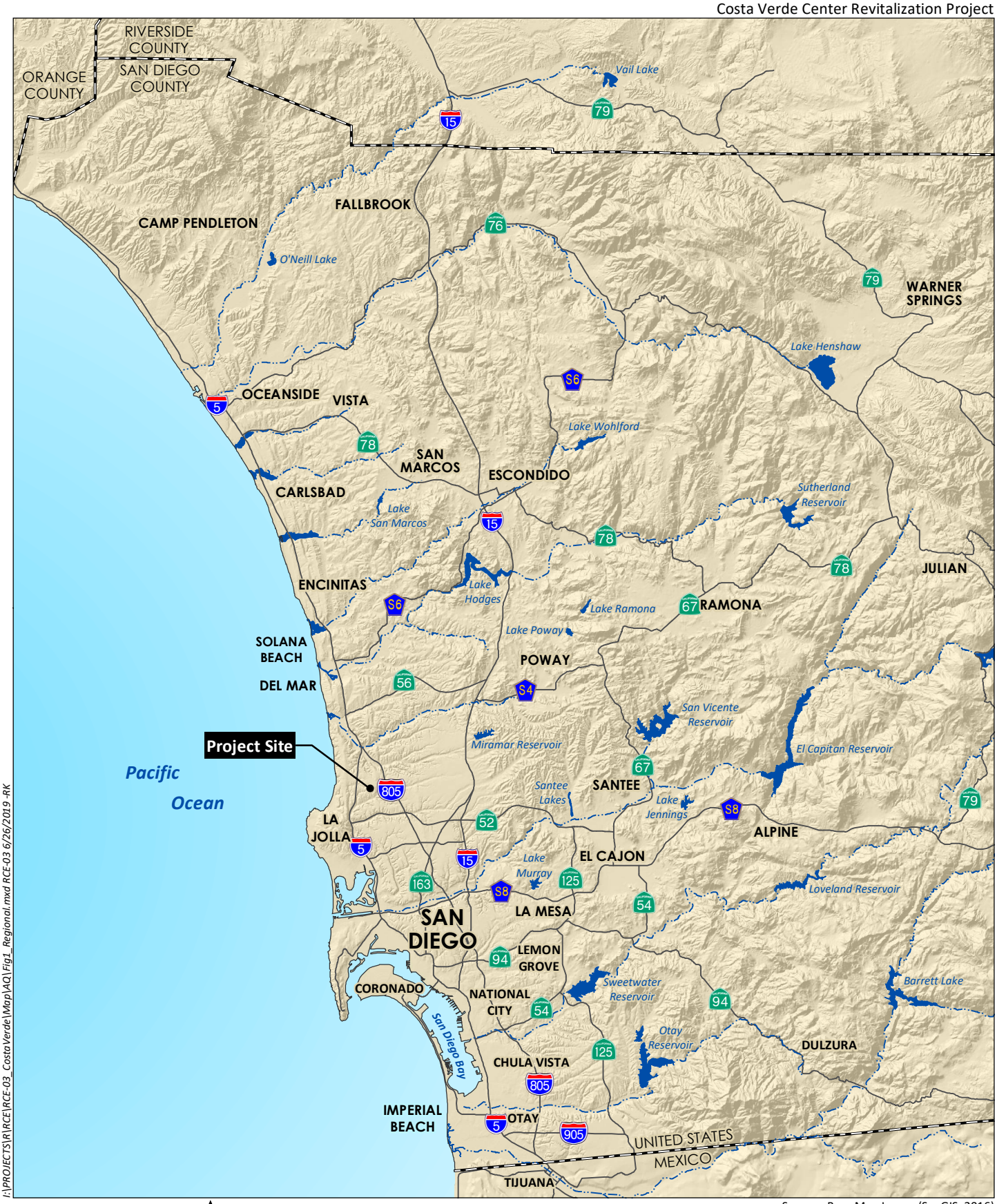
        ii) wheel-washing at each egress during muddy conditions, soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding; and for outbound transport trucks;

        iii) using secured tarps or cargo covering, watering, or treating of transported material; and

    b) be removed at the conclusion of each work day when active operations cease, or every 24 hours for continuous operations. If a street sweeper is used to remove any track-out/carry-out, only PM_{10}-efficient (particulate matter less than 10 microns) street sweepers certified to meet the most current South Coast Air Quality Management District (SCAQMD) Rule 1186 requirements shall be used. The use of blowers for removal of track-out/carry-out is prohibited under any circumstances.

The project would implement the BMP control measures listed below:

- A minimum of two applications of water during grading between dozer/scraper passes;
- Paving, chip sealing, or chemical stabilization of internal roadways after completion of grading;
- Termination of grading if winds exceed 25 miles per hour (mph);
- Maintenance of a minimum soil moisture of 12 percent in all exposed surfaces;
- Stabilization of dirt storage piles by chemical binders, tarps, fencing, or other erosion control;
- Vehicle speeds would be limited on unpaved roads to 15 mph; and
- Construction fleet use of any combination of diesel catalytic converters, diesel oxidation catalysts, and diesel particulate filters as well as California Air Resources Board (CARB)/U.S. Environmental Protection Agency (USEPA) Engine Certification Tier 4, or other equivalent methods approved by the CARB.



I:\PROJECTS\R\RCE\RCE-03_CostaVerde\Map\AQ\Fig1_Regional.mxd RCE-03 6/26/2019 -RK

0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1

I:\PROJECTS\R\RCE\RCE-03_CostaVerde\Map\AQ\Fig2_Vicinity.mxd RCE-03 6/27/2019 - RK

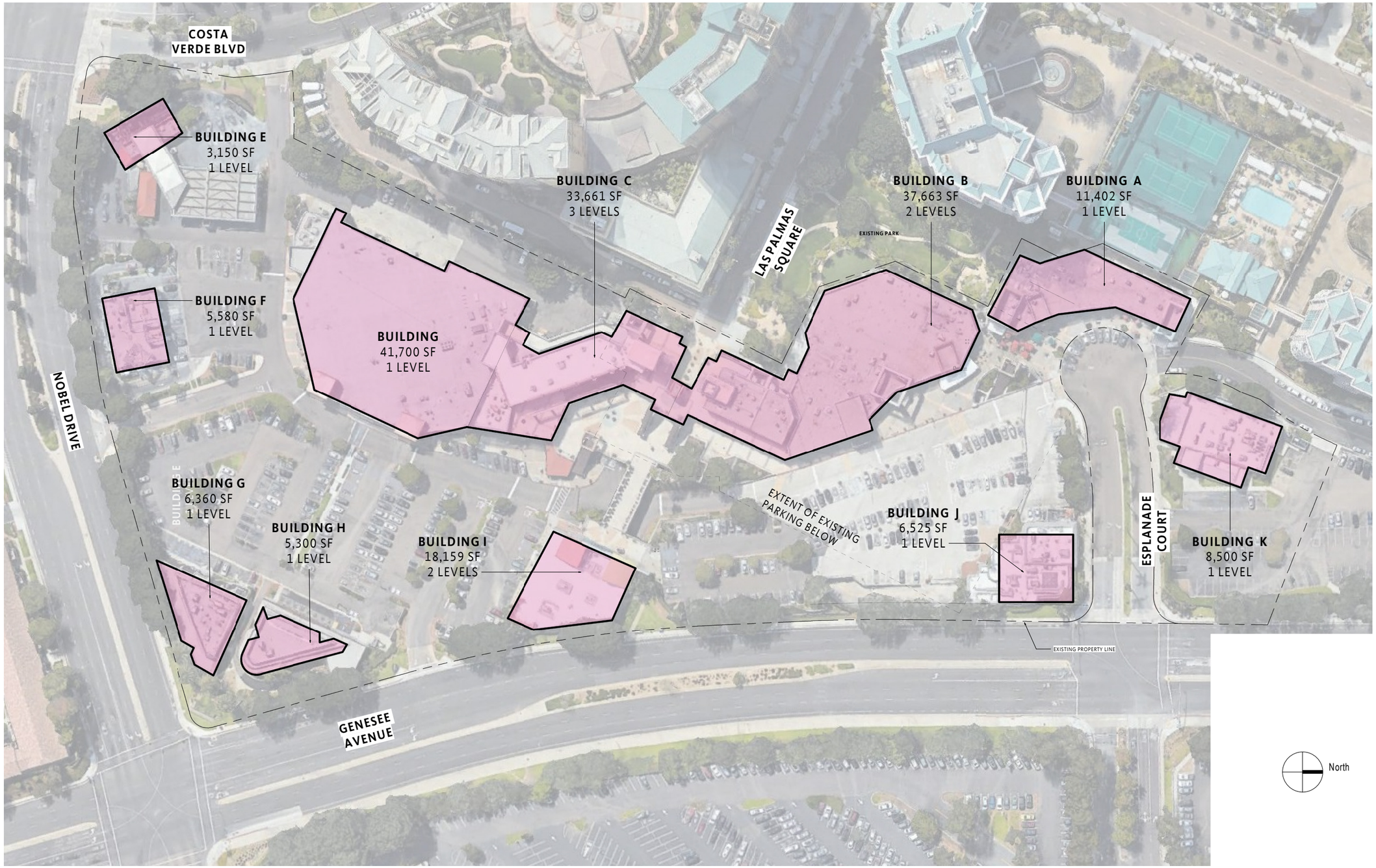
0 300 Feet

Source: Aerial (SanGIS 2017)

HELIX Environmental Planning

Project Vicinity

Figure 2



I:\PROJECTS\R\RCE\RCE-03_CostaVerde\Map\AQ\Fig3_ExistingSitePlan.indd RCE-03 06/26/19 -RK

Source: Gensler 2016

HELIX Environmental Planning

Existing Site Plan

Figure 3

COSTA VERDE BLVD
NOBEL DRIVE
EXISTING GAS STATION TO REMAIN 1 LEVEL
EXISTING SURFACE PARKING TO REMAIN
EXISTING RESTAURANT TO REMAIN 1 LEVEL
SLOPE DOWN
160' - 7"
411' - 9"
251' - 2"
194' - 0"
STAIR DOWN TO LEVEL B1
BUILDING D 2 LEVELS
BUILDING C 2 LEVELS
LAS PALMAS SQUARE
EXISTING PARK
74' - 1"
Q1 1 LEVEL
45' - 10"
29' - 1"
BUILDING B 4 LEVELS
PROPOSED ADDRESS LOCATION
65' - 7"
192' - 5"
BUILDING A 2 LEVELS
20' - 10"
120' - 3"
39' - 9"
EXISTING PROPERTY LINE TO BE VACATED
EL. 360' - 6"
61' - 5"
BUILDING E 1 LEVEL
BUILDING P 2 LEVEL PARKING GARAGE
RAMP DOWN
18' - 0"
9' - 0" TYP.
95' - 1"
43' - 11"
30' - 3"
63' - 5"
25' - 0"
64' - 3"
BUILDING G 2 LEVEL
Q2 1 LEVEL
BUILDING H 1 LEVEL
12' - 4"
24' - 0"
25' - 3"
20' - 0"
143' - 3"
28' - 10"
125' - 6"
25' - 4"
BUILDING J 1 LEVEL
4' - 5"
BUILDING K 1 LEVEL
62' - 1"
67' - 1"
39' - 5"
20' - 5"
179' - 3"
24' - 0"
24' - 0"
24' - 0"
24' - 0"
26' - 0"
133' - 5"
BUILDING T1 6 LEVELS
22' - 7"
BUILDING T2 6 LEVELS
51' - 6"
124' - 0"
ESPLANADE COURT
232' - 1"
124' - 10"
BUILDING L 7 LEVELS 200 KEYS
9' - 0"
18' - 0"
25' - 6"
20' - 7"
EXIT ONLY
ELEVATOR BY SAN DIEGO METRO TRANSIT SYSTEM
338' - 8"
NEW PROPERTY LINE
108' - 3"
120' - 0"
PROPOSED ADDRESS LOCATION
MID-COAST TROLLEY STATION ABOVE
STAIR DOWN TO LEVEL B1
BUILDING F 2 LEVELS
70' - 0"
15' - 0" SETBACK
103' - 5"
16' - 8"
133' - 5"
253' - 5"
PROPOSED ADDRESS LOCATION
GENESEE AVENUE
178' - 1"
PENDING RAMP AND STAIR DESIGN
North

I:\PROJECTS\R\RCE\RCE-03_CostaVerde\Mop\AQ\Fig4_ConceptualSitePlan.indd RCE-03 10/15/19 -RK

Source: RDC 2019

HELIX Environmental Planning

Conceptual Site Plan

Figure 4

LEGEND

1. Entry Signage
2. Parking Entry/Exit
3. Outdoor Seating & Dining Plaza
4. Connection to Existing Park
5. 12'-0" Sidewalk, Typ.
6. 2nd Floor Terrace
7. Decorative Removable Bollards, Typ.
8. Accent Paving on Podium Promenade
9. Overhead Trellis / Shade Structure
10. Umbrellas, Typ.
11. Covered Dining Areas
12. Stairwell From Podium to Grade (Runnels and/or Elevators are Available at All Stair Locations)
13. Central Lawn and Gathering Area
14. Flow Through Planters
15. Seatwall
16. CMU Block Wall
17. Elevator & Stair Access at LRT Platform
18. Aspahlt Paving to Remain
19. Loading Dock
20. Tree Grove
21. Parking Lot Trees in Raised Planters, Typ.
22. Painted Mural Parking Stalls, Typ.
23. Street Tree in Decomposed Granite Tree Well with Structural Soil, Typ.
24. Concrete Topping Slab at Parking Lot
25. Bench Seating Along Parkway, Typ.
26. Corner Monument Signage
27. Short Term Bicycle and Scooter Parking
28. Outdoor Fire Pit and Seating Area, Typ.
29. Decorative Pots, Typ.
30. Linear Raised Planters
31. Accessible Walkway
32. Existing Retaining Wall
33. Drop Off Area
34. Bike Hub
35. Enhanced Paving at Crosswalks, Typ.
36. Site Distance Triangles, Typ.

Costa Verde Blvd.
Right-Of-Way
Building Setback
Existing Gas Station
Existing Restaurant
Bldg. D
Bldg. C
Bldg. Q1
Bldg. Q2
Bldg. A
Bldg. B
Bldg. E
Bldg. F
Bldg. G
Bldg. H
Bldg. T1
Bldg. T2
Bldg. J
Bldg. K
Property Line
Las Palmas Square
Pedestrian Access Easement
135'-0" R/W
14'-0" Parkway
12'-0" Sidewalk per City of San Diego SDG-155
Noble Drive
Genesee Avenue
Light Rail Station & Platform
Esplanade Court
Hotel (Bldg. L)

I:\PROJECTS\R\RCE\RCE-03_CostaVerde\Map\AQ\Fig5_LandscapePlan.indd RCE-03 10/15/19 -RK

Source: RDC 2019

HELIX Environmental Planning

Landscape Plan

Figure 5

1.4 PROJECT DESIGN FEATURES

1.4.1 Area Source Reductions

- Use of low-volatile organic compound (VOC) coating exceeding the requirements of SDAPCD Rule 67.
    - All interior and exterior coatings are to be less than or equal to a VOC content of 50 grams per liter (g/L).

1.4.2 Energy Efficiencies

- New development under the project would be designed to meet the 2019 Title 24 energy efficiency standards. In accordance with the requirements of Title 24, the project would:
    - Install ceiling, attic, and wall insulation;
    - Install window glazing;
    - Have the installation of all heating, ventilation, and air conditioning (HVAC) units verified by a third party; and
    - Include roof anchors and pre-wiring to allow for the installation of photovoltaic systems.

2.0 REGULATORY SETTING

2.1 CRITERIA POLLUTANTS

2.1.1 Pollutants of Concern

Criteria pollutants are defined by state and federal law as a risk to the health and welfare of the general public. In general, air pollutants include the following compounds:

- Ozone (O_3)
- Reactive Organic Gases (ROGs) or VOCs
- Carbon Monoxide (CO)
- Nitrogen Dioxide (NO_2)
- Respirable Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$)
- Sulfur Dioxide (SO_2)
- Lead (Pb)

The following specific descriptions of health effects for each of the air pollutants potentially associated with project construction and operation are based on information provided by the USEPA (2007) and CARB (2009).

Ozone. Ozone is considered a photochemical oxidant, which is a chemical that is formed when VOCs and nitrogen oxides (NO_X), both by-products of fuel combustion, react in the presence of ultraviolet light. Ozone is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate

asthma, and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to ozone.

Reactive Organic Gases. ROGs (also known as VOCs) are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of ROGs. Other sources of ROGs include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROGs, but rather by reactions of ROGs to form secondary pollutants such as ozone.

Carbon Monoxide. CO is a product of fuel combustion. CO is an odorless, colorless gas. CO affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. CO can cause health effects to those with cardiovascular disease and can also affect mental alertness and vision.

Nitrogen Dioxide. NO_2 is also a by-product of fuel combustion and is formed both directly as a product of combustion and in the atmosphere through the reaction of nitrogen oxide (NO) with oxygen. NO_2 is a respiratory irritant and may affect those with existing respiratory illness, including asthma. NO_2 can also increase the risk of respiratory illness.

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

Sulfur Dioxide. SO_2 is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels such as coal and oil and by other industrial processes. Generally, the highest concentrations of SO_2 are found near large industrial sources. SO_2 is a respiratory irritant that can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term exposure to SO_2 can cause respiratory illness and aggravate existing cardiovascular disease.

Lead. Lead in the atmosphere occurs as particulate matter. With the phase-out of leaded gasoline, large manufacturing facilities are the sources of the largest amounts of lead emissions. Lead has the potential to cause gastrointestinal, central nervous system, kidney and blood diseases upon prolonged exposure. Lead is also classified as a probable human carcinogen. Because emissions of lead are found only in projects that are permitted by the local air district, lead is not an air pollutant of concern for the proposed project.

Air quality is defined by ambient air concentrations of specific pollutants identified by the USEPA to be of concern with respect to health and welfare of the general public. The USEPA is responsible for enforcing the Federal Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments. The CAA required the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for the criteria

pollutants, which are discussed above. Table 1, *Ambient Air Quality Standards*, shows the federal and state ambient air quality standards for these pollutants.

The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. CARB has established the more stringent California Ambient Air Quality Standards (CAAQS) for the six criteria pollutants through the California Clean Air Act of 1988 (CCAA), and also has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particles. Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are considered to be "nonattainment areas" for that pollutant. Effective June 3, 2016, the USEPA determined that 11 areas, including the San Diego Air Basin (SDAB), failed to attain the 2008 Ozone NAAQS by the applicable attainment date of July 20, 2015 and, thus, are reclassified as "Moderate" nonattainment for the 2008 Ozone NAAQS (CARB 2018a). The SDAB is an attainment area for the NAAQS for all other criteria pollutants including PM_{10} and $PM_{2.5}$. The SDAB is currently classified as a nonattainment area under the CAAQS for ozone, PM_{10}, and $PM_{2.5}$ (SDAPCD 2017).

Table 1
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary[1]	Secondary[2]
O_3	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	Same as Primary
PM_{10}	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	Same as Primary
$PM_{2.5}$	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
NO_2	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	–
	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
SO_2	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
	24 Hour	0.04 ppm (105 µg/m^3)	–	–
Lead	30-day Avg.	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary
	Rolling 3-month Avg.	–	0.15 µg/m^3	

Table 1
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary[1]	Secondary[2]
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	**No Federal Standards**	
Sulfates	24 Hour	25 µg/m^3		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)		
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)		

Source: CARB 2016

[1] National Primary Standards: The levels of air quality necessary, within an adequate margin of safety, to protect the public health.

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

Note: More detailed information of the data presented in this table can be found at the CARB website (www.arb.ca.gov).
O_3: ozone; ppm: parts per million; µg/m^3: micrograms per cubic meter; PM_{10}: large particulate matter;
AAM: Annual Arithmetic Mean; $PM_{2.5}$: fine particulate matter; CO: carbon monoxide; mg/m^3: milligrams per cubic meter;
NO_2: nitrogen dioxide; SO_2: sulfur dioxide; km: kilometer; –: No Standard.

The SDAPCD is the local agency responsible for the administration and enforcement of air quality regulations for the County. The SDAPCD and San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The County's Regional Air Quality Strategies (RAQS) was initially adopted in 1991 and is updated on a triennial basis. The most recent version of the RAQS was adopted by the SDAPCD in 2016 (SDAPCD 2016). The local RAQS, in combination with those from all other California nonattainment areas with serious (or worse) air quality problems, is submitted to CARB, which develops the California State Implementation Plan (SIP). The SIP relies on the same information from SANDAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin. The current federal and state attainment status for San Diego County is presented in Table 2, *San Diego Air Basin Attainment Status*.

Table 2
SAN DIEGO AIR BASIN ATTAINMENT STATUS

Criteria Pollutant	Federal Designation	State Designation
O_3 (1-hour)	(No federal standard)	Nonattainment
O_3 (8-hour)	Moderate Nonattainment	Nonattainment
CO	Attainment	Attainment
PM_{10}	Unclassifiable	Nonattainment
$PM_{2.5}$	Attainment	Nonattainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen Sulfide	(No federal standard)	Unclassifiable
Visibility	(No federal standard)	Unclassifiable

Source: SDAPCD 2017

2.2 TOXIC AIR CONTAMINANTS

Toxic air contaminants (TACs) are a category of air pollutants that have been shown to have an impact on human health but are not classified as criteria pollutants. Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. Air toxics 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 farms, landfills, construction sites, and residential areas. Adverse health effects of TACs can be carcinogenic (cancer-causing), short-term (acute) noncarcinogenic, and long-term (chronic) noncarcinogenic. Public exposure to TACs is a significant environmental health issue in California.

2.3 ODORS

The State of California Health and Safety Code Sections 41700 and 41705 and SDAPCD Rule 51 (commonly referred to as public nuisance law) prohibits emissions from any source whatsoever in such quantities of air contaminants or other material, which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. The provisions of these regulations do not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals. It is generally accepted that the considerable number of persons requirement in Rule 51 is normally satisfied when 10 different individuals/households have made separate complaints within 90 days. Odor complaints from a "considerable" number of persons or businesses in the area will be considered to be a significant, adverse odor impact.

The San Diego Municipal Code also addresses odor impacts at Chapter 14, Article 2, Division 7 paragraph 142.0710, "Air Contaminant Regulations," which states:

> Air contaminants including smoke, charred paper, dust, soot, grime, carbon, noxious acids, toxic fumes, gases, odors, and particulate matter, or any emissions that endanger human health, cause damage to vegetation or property, or cause soiling, shall not be permitted to emanate beyond the boundaries of the premises upon which the use emitting the contaminants is located.

3.0 EXISTING CONDITIONS

3.1 CLIMATE AND METEOROLOGY

The climate in southern California, including the SDAB, is controlled largely by the strength and position of the subtropical high-pressure cell over the Pacific Ocean. Areas within 30 miles of the coast experience moderate temperatures and comfortable humidity.

The predominant wind direction in the vicinity of project site is from the west to northwest and the average wind speed is approximately five miles per hour (Iowa Environmental Mesonet 2019). The annual average maximum temperature in the project area is approximately 67°F, and the annual average minimum temperature is approximately 56°F. Total precipitation in the project area averages approximately 10 inches annually. Precipitation occurs mostly during the winter and relatively infrequently during the summer (Western Regional Climate Center 2016).

Due to its climate, the SDAB experiences frequent temperature inversions (temperature increases as altitude increases, which is the opposite of general patterns). Temperature inversions prevent air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. During the summer, air quality problems are created due to the interaction between the ocean surface and the lower layer of the atmosphere, creating a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons and NO_2 react under strong sunlight, creating smog. Light, daytime winds, predominantly from the west, further aggravate the condition by driving the air pollutants inland, toward the foothills. During the fall and winter, air quality problems are created due to CO and NO_2 emissions. High NO_2 levels usually occur during autumn or winter, on days with summer-like conditions.

3.2 EXISTING AIR QUALITY

3.2.1 Criteria Pollutants

3.2.1.1 Attainment Designations

Attainment designations are discussed in Section 2.1.1 and Table 2. The SDAB is classified as a moderate nonattainment area for the 8-hour NAAQS for ozone. The SDAB is currently classified as a nonattainment area under the CAAQS for ozone (serious nonattainment), PM_{10}, and $PM_{2.5}$. The SDAB is an attainment area for all other criteria pollutants.

3.2.1.2 Monitored Air Quality

The SDAPCD operates a network of ambient air monitoring stations throughout the county. The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. The nearest ambient monitoring station to the project site is the San Diego-Kearny Villa Road monitoring station located near Marine Corps Air Station Miramar, approximately 5.3 miles southeast of the project site. Air quality data for this monitoring station are shown in Table 3, *Air Quality Monitoring Data.*

Table 3
AIR QUALITY MONITORING DATA

Pollutant	2015	2016	2017
Ozone (O_3)			
Maximum 1-hour concentration (ppm)	0.077	0.087	0.097
Days above 1-hour state standard (>0.09 ppm)	0	0	2
Maximum 8-hour concentration (ppm)	0.070	0.075	0.083
Days above 8-hour state standard (>0.070 ppm)	0	3	6
Days above 8-hour federal standard (>0.075 ppm)	0	0	4
Carbon Monoxide (CO)			
Maximum 8-hour concentration (ppm)	*	*	*
Days above state or federal standard (>9.0 ppm)	*	*	*
Respirable Particulate Matter (PM_{10})			
Maximum 24-hour concentration ($\mu g/m^3$)	39.0	36.0	47.0
Days above state standard (>50 $\mu g/m^3$)	0	0	0
Days above federal standard (>150 $\mu g/m^3$)	0	0	0

Table 3 (cont.)
AIR QUALITY MONITORING DATA

Pollutant	2015	2016	2017
Fine Particulate Matter ($PM_{2.5}$)			
Maximum 24-hour concentration (µg/m^3)	25.7	20.3	27.5
Days above federal standard (>35 µg/m^3)	0	0	0
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration (ppm)	0.051	0.053	0.054
Days above state 1-hour standard (0.18 ppm)	0	0	0

Source: CARB 2018b
ppm = parts per million, µg/m^3 = micrograms per cubic meter
*Insufficient data available

From 2015 to 2017, monitoring data at the San Diego-Kearny Villa Road station show acceptable levels of NO_2, $PM_{2.5}$ and PM_{10}. The state 8-hour ozone standard was violated three times in 2016 and six times in 2017, and the federal 8-hour ozone standard was violated four times in 2017. The 1-hour ozone standard was violated twice in 2017, with no exceedances in 2015 or 2016.

4.0 METHODOLOGY AND SIGNIFICANCE CRITERIA

4.1 METHODOLOGY

Criteria pollutant emissions were calculated using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2 (California Air Pollution Control Officers Association [CAPCOA] 2017). CalEEMod is a computer model used to estimate criteria air pollutant emissions resulting from construction and operation of land development projects throughout the state of California. CalEEMod was developed by the SCAQMD with the input of several air quality management and pollution control districts. The input data and subsequent construction and operation emission estimates for the proposed project are discussed below. CalEEMod output files are included in Appendix A.

4.1.1 Construction Emissions

As described above, construction emissions are assessed using the CalEEMod, Version 2016.3.2. CalEEMod contains OFFROAD and EMFAC2014 emission factors from CARB's models for off-road equipment and on-road vehicles, respectively. The construction analysis included modeling of the projected construction equipment that would be used during each construction activity and quantities of earth and debris to be moved. The model calculates emissions of CO, PM_{10}, $PM_{2.5}$, SO_2, and the ozone precursors VOC and NO_X.

Construction input data for CalEEMod include, but are not limited to (1) the anticipated start and finish dates of construction activity; (2) inventories of construction equipment to be used; (3) areas to be excavated and graded; and (4) volumes of materials to be exported from and imported to the project area. The analysis assessed maximum daily emissions from individual construction activities, including demolition, site preparation, grading, underground utilities installation, building construction, paving, and architectural coating.

Construction would require heavy equipment during demolition, site preparation, mass grading, underground utilities installation, building construction, and paving. Construction equipment estimates

are based on assumptions provided by the Project Applicant. Table 4, *Construction Equipment Assumptions*, presents a summary of the assumed equipment that would be involved in each stage of construction.

Table 4
CONSTRUCTION EQUIPMENT ASSUMPTIONS

Construction Phase	Equipment	Number
Demolition	Excavator	2
	Concrete/Industrial Saw	1
	Rubber Tired Loader	1
	Off-highway Truck	2
Site Preparation	Rubber Tired Dozer	4
	Tractor/Loader/Backhoe	4
Grading	Excavator	1
	Grader	1
	Rubber Tired Dozer	1
	Tractors/Loaders/Backhoe	3
	Scraper	3
	Off-highway Truck	2
Underground Utilities	Tractors/Loaders/Backhoe	2
Building Construction	Crane	1
	Excavator (for soil drill)	1
	Rough Terrain Forklift	4
	Generator Set	2
	Tractors/Loaders/Backhoe	3
	Welder	3
	Off-highway Truck (cement truck)	2
Paving	Paver	2
	Paving Equipment	2
	Roller	2
Architectural Coating	Air Compressor	1

Source: CalEEMod (output data, including equipment horsepower, is provided in Appendix A)

The construction schedule was determined by input from the Project Applicant. As shown in Table 5, *Anticipated Construction Schedule*, construction is assumed to start in September 2020 and is projected to end ~~January 2024~~September 2023.

Table 5
ANTICIPATED CONSTRUCTION SCHEDULE

Construction Activity	Construction Period		
	Start	End	Number of Working Days
Underground Utilities	9/1/2020	2/26/2021	129
Demolition	2/1/2021	2/26/2021	20
Site Preparation	2/1/2021	2/26/2021	20
Grading	5/1/2021	7/16/2021	55
Building Construction	7/19/2021	7/18/2023	522
Paving	7/~~19~~1/2023	~~9~~8/~~18~~31/2023	44
Architectural Coating	~~9~~7/~~19~~/2023	~~1~~8/~~16~~31/~~2024~~2023	~~86~~89

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

The quantity, duration, and the intensity of construction activity have an effect on the amount of construction emissions and their related pollutant concentrations that occur at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner-burning construction equipment fleet mix than incorporated in the CalEEMod, and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval). A complete listing of the assumptions used in the analysis and model output is provided in Appendix A of this report.

CalEEMod has the capability to calculate reductions in construction emissions from the effects of dust control, diesel-engine classifications, and other selected emissions reduction measures. Construction emission calculations presented herein assume the implementation of standard dust control measures listed in Section 1.3, including watering two times daily during grading, ensuring that all exposed surfaces maintain a minimum soil moisture of 12 percent, and limiting vehicle speeds on unpaved roads to 15 mph.

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

The project would also exceed the requirements of SDAPCD Rule 67 (as described in Section 1.4). All interior and exterior coatings will have a VOC content less than or equal to 50 g/L. The quantities of coatings that would be applied to the interior and exterior of the new buildings were estimated according to CalEEMod default assumptions.

4.1.2 Operational Emissions

Operational impacts associated with the project's net new development of 400,000 SF of commercial/ office uses and the 200-room, 125,000-SF hotel were estimated using CalEEMod. Operational sources of emissions include area, energy, and transportation. Operational emissions from area sources include

engine emissions from landscape maintenance equipment, and VOC emissions from repainting of buildings. Energy source emissions include the combustion of natural gas for heating and hot water.

Operational emissions from mobile source emissions are associated with project-related vehicle trip generation. Based on the Traffic Impact Analysis (Linscott, Law & Greenspan Engineers [LLG] 2019), the project would generate an additional 4,981 primary average daily trips (ADT) over what is already generated by the existing shopping center. CalEEMod default vehicle speeds, trip purpose, and trip distances were applied to the primary trip types as analyzed in the Traffic Impact Analysis. Model output data sheets are included in Appendix A.

The project would be subject to the 2019 Title 24 Building Energy Efficiency Standards; however, due to model limitations, the project is conservatively modeled as meeting the 2016 standards.

4.1.2.1 Local Operational Emissions

Vehicular trips associated with the proposed project would contribute to the congestion at intersections and along roadway segments in the project vicinity. Localized air quality effects would occur when emissions from vehicular traffic increase in local areas as a result of the proposed project. The primary mobile source pollutant of local concern is CO, which is a direct function of vehicle idling time and, thus, traffic flow conditions. CO transport is extremely limited; it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations proximate to a congested roadway or intersection may reach unhealthful levels affecting local sensitive receptors (residents, school children, the elderly, hospital patients, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentrations, modeling is recommended to determine a project's effect on local CO levels. Localized increases in CO concentrations from vehicle congestion at intersections affected by development were screened for in accordance with the protocol recommended by the California Department of Transportation (Caltrans) and published in their *Transportation Project-Level Carbon Monoxide Protocol* (Caltrans 1998).

4.2 SIGNIFICANCE CRITERIA

The City (2016) has approved guidelines for determining significance based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines, which provide guidance that a project would have a significant air quality environmental impact if it would:

1. Conflict with or obstruct implementation of the San Diego RAQS or applicable portions of the SIP;

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 SDAB is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

4. Expose sensitive receptors (i.e., day care centers, schools, retirement homes, and hospitals or medical patients in residential homes which could be impacted by air pollutants) to substantial pollutant concentrations;

5. Create objectionable odors affecting a substantial number of people; or

6. Release substantial quantities of air contaminants beyond the boundaries of the premises upon which the stationary source emitting the contaminants is located.

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

For CEQA purposes, these screening criteria can be used as numeric methods to demonstrate that a project's total emissions would not result in a significant impact to air quality. The screening thresholds are included in Table 6, *Screening-level Thresholds for Air Quality Impact Analysis*.

Table 6
SCREENING-LEVEL THRESHOLDS FOR AIR QUALITY IMPACT ANALYSIS

Pollutant	Total Emissions		
Construction Emissions (Pounds per Day)			
Respirable Particulate Matter (PM_{10})	100		
Fine Particulate Matter ($PM_{2.5}$)	55		
Oxides of Nitrogen (NO_X)	250		
Oxides of Sulfur (SO_X)	250		
Carbon Monoxide (CO)	550		
Volatile Organic Compounds (VOCs)	75		
Operational Emissions			
	Pounds per Hour	**Pounds per Day**	**Tons per Year**
Respirable Particulate Matter (PM_{10})	---	100	15
Fine Particulate Matter ($PM_{2.5}$)	---	55	10
Oxides of Nitrogen (NO_X)	25	250	40
Oxides of Sulfur (SO_X)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	---	3.2	0.6
Volatile Organic Compounds (VOC)	---	75	13.7
Toxic Air Contaminant Emissions			
Excess Cancer Risk	1 in 1 million 10 in 1 million with T-BACT		
Non-Cancer Hazard	1.0		

Source: SDAPCD Rule 20.2 and Rule 1210.
T-BACT = Toxics-Best Available Control Technology

Any unreasonable odor discernible at the property line of the site will be considered a significant odor impact.

5.0 IMPACT ANALYSIS

This section evaluates potential direct impacts of the proposed project related to the air pollutant emissions.

5.1 CONSISTENCY WITH AIR QUALITY PLANS

The SDAPCD is required, pursuant to the federal CAA, to reduce emissions of criteria pollutants for which the SDAB is in nonattainment. Strategies to achieve these emissions reductions are developed in the RAQS and SIP, prepared by the SDAPCD for the region. Both the RAQS and SIP are based on SANDAG population projections, as well as land use designations and population projections included in general plans for those communities located within the County. Population growth is typically associated with the construction of residential units or large employment centers.

A project would be inconsistent with the RAQS/SIP if it results in population and/or employment growth that exceed growth estimates for the area. In the event that a project proposes development which is less dense than anticipated within the General Plan, the project would likewise be consistent with the RAQS. If a project proposes development that is greater than that anticipated in the City General Plan and SANDAG's growth projections upon which the RAQS is based, the project could be in conflict with the RAQS and SIP, and may have a potentially significant impact on air quality. This situation would warrant further analysis to determine if the project and the surrounding projects exceed the growth projections used in the RAQS for the specific subregional area.

While potential conflicts with the RAQS may occur when a proposed development, such as the proposed project, seeks to add commercial/office space and a hotel that were not accounted for on the project site when the RAQS was prepared, the effect on anticipated regional population and employment is also important. No adverse impacts to population or housing are anticipated from development of the proposed project. The retention of retail space and addition of commercial/office space on the project site in an area that already supports extensive residential development would provide for additional employment opportunities. The project is estimated to retain 280 retail jobs and accommodate an additional 1,550 office jobs. For the University Community Plan (UCP) area, SANDAG forecasts an additional 26,480 jobs to be added in the area from 2012 to 2050, for an increase of 30 percent (SANDAG 2013). Therefore, the UCP area would be able to accommodate the project's addition of jobs to the area within the existing growth projections. As there are no existing residential uses on site, the project would not displace any existing housing. The multi-use and transit-oriented nature of the project conform to overarching goals in the UCP of developing urban nodes in the community.

In addition, SANDAG's Regional Plan (SANDAG 2015) is the long-range planning document developed to address the region's housing, economic, transportation, environmental, and overall quality-of-life needs. The Regional Plan establishes a planning framework and implementation actions that increase the region's sustainability and encourage "smart growth while preserving natural resources and limiting urban sprawl." The Regional Plan encourages the regions within the County to increase residential and employment concentrations in areas with the best existing and future transit connections, and to preserve important open spaces. The focus is on implementation of basic smart growth principles designed to strengthen the integration of land use and transportation. Consistent with the Regional

Plan, the project would be developed to include smart growth concepts in a Transit-Priority Area, which clusters commercial/retail, office, and recreation (hotel) uses around services, jobs, and alternative transportation, such as the Trolley and bus. Employees of the project, those occupying the proposed offices, and hotel visitors would be able to access other areas of the City and region easily through the adjacent Trolley and bus lines, and would be able to access services on site. This would help to reduce the average vehicle miles traveled (VMT) for the average commuter, which would have the effect of reducing pollutant emissions from personal vehicle trips for project employees and visitors.

In conclusion, population and housing related impacts associated with the project would not be significant. Furthermore, as detailed in Section 5.2, below, the project would not result in a significant air quality impact with regards to construction- and operational-related emissions of ozone precursors or criteria air pollutants. The project would also comply with existing and new rules and regulations as they are implemented by the SDAPCD, CARB, and/or USEPA related to emissions generated during construction. In addition, the mixed-use aspect of the project site and easy access to mass transit would reduce VMT for project employees and visitors, thereby reducing pollutant emissions associated with vehicle trips. Therefore, it is unlikely that the additional land uses and employment from the project would interfere with the SDAPCD's goals for improving air quality in the SDAB. Impacts associated with conformance to regional air quality plans would be less than significant.

5.2 CONFORMANCE TO FEDERAL AND STATE AIR QUALITY STANDARDS

The project would generate criteria pollutants in the short term during construction and the long term during operation. To determine whether a project would result in emissions that would violate an air quality standard or contribute substantially to an existing or projected air quality violation, a project's emissions are evaluated based on the quantitative emission thresholds established by the SDAPCD (as shown in Table 6).

5.2.1 Construction

The project's construction emissions were estimated using the CalEEMod model as described in Section 4.1.1. Project-specific input was based on general information provided in Section 1.0 and default model settings to estimate reasonable worst-case conditions. Additional details of phasing, selection of construction equipment, and other input parameters, including CalEEMod data, are included in Appendix A.

The results of the calculations for project construction are shown in Table 7, *Maximum Daily Construction Emissions*. The data are presented as the maximum anticipated daily emissions for comparison with the SDAPCD thresholds.

Table 7
MAXIMUM DAILY CONSTRUCTION EMISSIONS

Phase	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Underground Utilities	<0.5	<0.5	5	<0.5	<0.5	<0.5
Demolition	1	18	31	<0.5	7	1
Site Preparation	2	48	37	<0.5	14	7
Grading	6	169	93	1	15	5
Building Construction	6	101	86	<0.5	28	7
Paving	<0.5	1	18	<0.5	<0.5	<0.5
Architectural Coating	~~28~~27	<0.5	3	<0.5	<0.5	<0.5
Maximum Daily Emissions[1]	**~~28~~33**	**169**	**~~93~~102**	**1**	**28**	**8**
SDAPCD Thresholds	*75*	*250*	*550*	*250*	*100*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

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

[1] Maximum daily emissions account for overlapping activities. Maximum daily VOC, CO, and PM_{10} emissions occur during concurrent Building Construction, Paving, and Architectural Coating. Maximum daily NO_X, ~~CO,~~ and SO_X emissions occur during Grading. ~~Maximum daily PM_{10} emissions occur during Building Construction.~~ Maximum daily $PM_{2.5}$ emissions occur when Underground Utilities, Demolition, and Site Preparation activities overlap. Totals may not sum due to rounding and because peak emissions reported for Building Construction occur in 2021 and are greater than emissions that occur in 2023 concurrent with peak Paving and Architectural Coatings emissions.

VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides;
PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 7, emissions of all criteria pollutants related to project construction would be below the SDAPCD's significance thresholds. Therefore, direct impacts from criteria pollutants generated during construction would be less than significant.

5.2.2 Operation

The project's operational emissions were estimated using the CalEEMod model as described in Section 4.1.2. Operational emission calculations and model outputs are provided in Appendix A. Table 8, *Maximum Daily Operational Emissions*, presents the summary of operational emissions for the project.

Table 8
MAXIMUM DAILY OPERATIONAL EMISSIONS

Category	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	12	<0.5	<0.5	<0.5	<0.5	<0.5
Energy	<0.5	3	3	<0.5	<0.5	<0.5
Mobile	6	23	65	<0.5	21	6
Total Daily Emissions	**18**	**27**	**68**	**<0.5**	**22**	**6**
SDAPCD Thresholds	*75*	*250*	*550*	*250*	*100*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

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

VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide;
PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 8, project emissions of all criteria pollutants during operation would be below the daily thresholds. Therefore, operation of the project would not result in a significant impact on air quality.

5.3 CUMULATIVELY CONSIDERABLE NET INCREASE OF NONATTAINMENT CRITERIA POLLUTANTS

The region is a federal and/or state nonattainment area for PM_{10}, $PM_{2.5}$, and ozone. The project would contribute particulates and the ozone precursors VOC and NO_X to the area during project construction and operation. As described in Section 5.2, emissions during construction would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Therefore, construction emissions would not be cumulatively considerable, and the impact would be less than significant.

Long-term emissions, as shown above in Table 8, would be well below regional thresholds, and, therefore, not cumulatively considerable. The long-term cumulative impact would be less than significant.

5.4 IMPACTS TO SENSITIVE RECEPTORS

Impacts to sensitive receptors are typically analyzed for operational period CO hotspots and exposure to TACs. An analysis of the project's potential to expose sensitive receptors to these pollutants is provided below.

5.4.1 Carbon Monoxide Hotspots

5.4.1.1 Intersections

A CO hot spot is an area of localized CO pollution caused by severe vehicle congestion on major roadways, typically near intersections. A quantitative screening is required in two instances: (1) if a project increases the average delay at signalized intersections operating at Level of Service (LOS) E or F; or (2) if a project causes an intersection that would operate at LOS D or better without the project to operate at LOS E or F with the project. According to the Traffic Impact Analysis (LLG 2019), 20 intersections under the Year 2035 + Project scenario would operate at LOS E or F and experience an increase in delay from the project:

1. Eastgate Mall at Genesee Avenue
2. La Jolla Village Drive at Regents Road
3. La Jolla Village Drive at Genesee Avenue
4. La Jolla Village Drive at Executive Way
5. La Jolla Village Drive at Towne Centre Drive
6. I-805 SB Ramps at La Jolla Village Drive
7. I-805 NB Ramps at Miramar Road
8. Costa Verde Boulevard at Loop Road (South)

9. Genesee Avenue at Esplanade Court
10. I-5 NB Off Ramp at Nobel Drive
11. Nobel Drive at Regents Road
12. Nobel Drive at Costa Verde Boulevard
13. Nobel Drive at Genesee Avenue
14. Nobel Drive at Towne Centre Drive
15. Nobel Drive at Judicial Drive
16. Genesee Avenue at Decoro Street
17. Genesee Avenue at Governor Drive
18. Genesee Avenue at SR-52 WB Ramps
19. Genesee Avenue at SR-52 EB Ramps
20. Genesee Avenue at Centurion Square

Therefore, consistent with the CO Protocol, these findings indicate that further screening is required. Although the SDAPCD has not, various air quality agencies in California have developed conservative screening methods. The screening methods of the Sacramento Metropolitan Air Quality Management District (SMAQMD) are used for this project because ambient CO concentrations within the SMAQMD jurisdiction are higher than for the project area, as measured by CARB, resulting in a more conservative analysis. The SMAQMD states that a project would not result in a significant impact to local CO concentrations if it meets all of the below criteria:

- The affected intersection carries less than 31,600 vehicles per hour;
- The project does not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, below-grade roadway, or other location where horizontal or vertical mixing of air would be substantially limited; and
- The affected intersection, which includes a mix of vehicle types, is not anticipated to be substantially different from the county average, as identified by EMFAC or CalEEMod models.

The traffic volumes at the affected intersections under the highest traffic scenario from the Traffic Impact Analysis (Year 2035 + Project) are estimated to be the following during the highest peak hour:

1. 5,044 vehicles (AM peak hour) at Eastgate Mall and Genesee Avenue
2. 8,547 vehicles (PM peak hour) at La Jolla Village Drive and Regents Road
3. 8,804 vehicles (AM peak hour) at La Jolla Village Drive and Genesee Avenue
4. 6,831 vehicles (PM peak hour) at La Jolla Village Drive and Executive Way
5. 9,320 vehicles (PM peak hour) at La Jolla Village Drive and Towne Centre Drive
6. 8,814 vehicles (AM peak hour) at I-805 SB Ramps and La Jolla Village Drive
7. 7,872 vehicles (PM peak hour) at I-805 NB Ramps and Miramar Road

8. 1,306 vehicles (PM peak hour) at Costa Verde Boulevard and Loop Road (South)
9. 5,428 vehicles (PM peak hour) at Genesee Avenue and Esplanade Court
10. 4,716 vehicles (PM peak hour) at I-5 NB Off Ramp and Nobel Drive
11. 5,044 vehicles (PM peak hour) at Nobel Drive and Regents Road
12. 4,204 vehicles (PM peak hour) at Nobel Drive and Costa Verde Boulevard
13. 6,983 vehicles (PM peak hour) at Nobel Drive and Genesee Avenue
14. 3,641 vehicles (PM peak hour) at Nobel Drive and Towne Centre Drive
15. 3,648 vehicles (PM peak hour) at Nobel Drive and Judicial Drive
16. 5,532 vehicles (PM peak hour) at Genesee Avenue and Decoro Street
17. 6,345 vehicles (PM peak hour) at Genesee Avenue and Governor Drive
18. 4,219 vehicles (PM peak hour) at Genesee Avenue and SR-52 WB Ramps
19. 4,212 vehicles (PM peak hour) at Genesee Avenue and SR-52 EB Ramps
20. 5,235 vehicles (PM peak hour) at Genesee Avenue and Centurion Square

These intersections are not located in a tunnel, urban canyon, or similar area that would limit the mixing of air, nor is the vehicle mix anticipated to be substantially different than the San Diego County average. There would be no potential for a CO hot spot or exceedance of State or Federal CO ambient air quality standard because the maximum traffic volumes would be substantially less than the 31,600 vehicles per hour screening level; because the congested intersections are located where mixing of air would not be limited; and because the vehicle mix would not be uncommon. Therefore, air quality impacts related to the exposure of sensitive receptors to substantial pollutant concentrations related to intersection operations would be less than significant.

5.4.2 Exposure to Toxic Air Contaminants

5.4.2.1 Construction

Construction activities would result in short-term project-generated emissions of diesel PM from the exhaust of off-road, heavy-duty diesel equipment. CARB identified diesel PM as a TAC in 1998. The dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Thus, the risks estimated for a maximally exposed individual (MEI) are higher if a fixed exposure occurs over a longer time period. According to the Office of Environmental Health Hazard Assessment, health risk assessments (HRAs), which determine the exposure of sensitive receptors to TAC emissions, should be based on a 30-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project.

There would be relatively few pieces of off-road, heavy-duty diesel equipment used during construction, and the construction period would be relatively short, especially when compared to 30 years. Combined with the highly dispersive properties of diesel PM and additional reductions in exhaust emissions from improved equipment (as detailed under Section 1.3), construction-related emissions would not expose sensitive receptors to substantial emissions of TACs. Impacts from construction emissions would be less than significant.

5.4.2.2 Operation

With regard to long-term operations, HRAs are typically conducted for substantial sources of diesel particulate emissions (e.g., truck stops, bus stations, and warehouse distribution facilities); these types of sources would not be part of the project. Other sources of acutely and chronically hazardous toxic air contaminants include industrial manufacturing processes, automotive repair facilities, and dry cleaning facilities. A dry cleaning facility currently exists on the project site. This facility would be removed as part of demolition, and a new dry cleaning facility may be included as part of the proposed project.

The main pollutant associated with dry cleaning facilities is perchloroethylene (perc), which is a TAC used in some dry cleaning operations. In 2007, CARB approved the amendments to the Airborne Toxic Control Measure for Emissions of Perchloroethylene (Perc) from Dry Cleaning Operations, which began prohibiting the installation of new dry cleaning machines that use perc in 2008 (CARB 2007). CARB lists several alternative dry cleaning technologies that do not contain TACs, such as water or carbon dioxide-based cleaning (CARB 2015). Since the CARB rules prohibit installation of new dry cleaning machines that use perc, any dry cleaner installed as part of the proposed project would not use perc, and therefore would not be a source of TACs. In addition, CARB recommendations on siting sensitive land uses near dry cleaners only apply if the dry cleaners use perc (CARB 2005). Therefore, the project does not warrant a HRA and the proposed project uses would not generate substantial TACs during long-term operations.

5.5 ODORS

As discussed above, the State of California Health and Safety Code Sections 41700 and 41705, and SDAPCD Rule 51, prohibit emissions from any source whatsoever in such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. Any unreasonable odor discernible at the property line of the project site will be considered a significant odor impact.

The project could produce odors during proposed construction activities resulting from construction equipment exhaust, application of asphalt, and/or the application of architectural coatings; however, standard construction practices would minimize the odor emissions and their associated impacts. Furthermore, any odors emitted during construction would be temporary, short-term, and intermittent in nature, and would cease upon the completion of the respective phase of construction. Accordingly, the proposed project would not create objectionable odors affecting a substantial number of people during construction, and short-term impacts would be less than significant.

During project operation, the temporary storage of refuse could be a potential source of odor; however, project-generated refuse is required to be stored in covered containers and removed at regular intervals in compliance with the City's Municipal Code solid waste regulations, thereby precluding significant odor impacts. With regard to the restaurant portion of the project, roof vents will be installed to allow steam and food exhaust to be released into the air. Odors associated with the restaurant portion of the project would be typical smells associated with cooked foods and would not result in unfamiliar odors that substantially differ from those already produced by similar land uses within the Costa Verde Center. Furthermore, the proposed project would be required to comply with the aforementioned SDAPCD Rule 51 which prohibits the discharge of odorous emissions that would create a public nuisance. As such, long-term operation of the proposed project would not create objectionable odors affecting a substantial number of people.

6.0 LIST OF PREPARERS

Victor Ortiz, Air Quality Specialist
Hunter Stapp, Air Quality Analyst
Andrea Bitterling, Project Manager

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

7.0 REFERENCES

California Air Pollution Control Officers Association (CAPCOA). 2017. California Emission Estimator Model (CalEEMod) Version 2016.3.2. Released November.

California Air Resources Board (CARB). 2018a. Federal Standard Area Designations. Available at: https://www.arb.ca.gov/desig/feddesig.htm. Accessed on April 2.

2018b. Top 4 Measurements and Days Above the Standard. Available at: http://www.arb.ca.gov/adam/topfour/topfour1.php.

2016. Ambient Air Quality Standards. May 4. Available at: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

2015. Alternative Solvents: Health and Environmental Impacts. Available at: https://www.arb.ca.gov/toxics/dryclean/notice2015_alt_solvents.pdf.

2009. ARB Fact Sheet: Air Pollution and Health. December 2. Available at: http://www.arb.ca.gov/research/health/fs/fs1/fs1.htm.

2007. Fact Sheet – Amended Dry Cleaning ATCM Requirements. Available at: https://www.arb.ca.gov/toxics/dryclean/factsheetmarch2007.pdf.

2005. Air Quality and Land Use Handbook: A Community Health Perspective. April. Available at: http://www.fenceline.org/richmond/docs/CARB%20Air%20Handbook.pdf.

California Department of Transportation (Caltrans). 1998. Caltrans ITS Transportation Project-Level Carbon Monoxide Protocol.

City of San Diego. 2016. California Environmental Quality Act Significance Determination Thresholds. Development Services Department.

Iowa Environmental Mesonet. 2019. San Diego/Gillespie Windrose Plot. Available at: http://mesonet.agron.iastate.edu/sites/windrose.phtml?station=NKX&network=CA_ASOS.

Linscott, Law & Greenspan Engineers (LLG). 2019. Transportation Impact Analysis, Costa Verde Center Revitalization Project. October.

San Diego Association of Governments (SANDAG). 2015. San Diego Forward: The Regional Plan. October.

2013. Series 13 Regional Growth Forecast, Data Surfer. University Community Planning Area City of San Diego. October.

San Diego County Air Pollution Control District (SDAPCD). 2017. Attainment Status. Accessed April 14. Available at: http://www.sdapcd.org/content/sdc/apcd/en/air-quality-planning/attainment-status.html.

2016. 2016 Revision of the Regional Air Quality Strategy for San Diego County. Final. December. Available from: https://www.sdapcd.org/content/dam/sdc/apcd/PDF/Air%20Quality%20Planning/2016%20RAQS.pdf.

U.S. Environmental Protection Agency (USEPA). 2007. The Effects of Air Pollutants – Health Effects.

Western Regional Climate Center. 2016. Period of Record Monthly Climate Summary, San Diego Seaworld, California (047741). Available at: http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7741.

This page intentionally left blank

Appendix A

CalEEMod Output

Costa Verde Center Revitalization Project

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	40.00	1000sqft	0.92	40,000.00	0
Research & Development	360.00	1000sqft	8.26	360,000.00	0
Hotel	200.00	Room	0.95	125,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2024
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Hotel lot acreage and square footage from plans.

Construction Phase - Construction schedule provided by applicant.

Off-road Equipment - Construction equipment list provided by applicant.

Off-road Equipment - Construction equipment list provided by applicant.

Off-road Equipment - Construction equipment list provided by applicant.

Off-road Equipment - Construction equipment list provided by applicant.

Off-road Equipment - Construction equipment list provided by applicant.

Off-road Equipment -

Off-road Equipment -

Grading - Total acres graded provided by applicant.

Demolition -

Trips and VMT - Building construction trips based on provided construction traffic data.

Architectural Coating - Low VOC coatings.

Vehicle Trips - Traffic data from LLG 2019.

Area Coating - Low VOC coatings

Solid Waste - Solid waste calculated from City Waste Generation Factors, with the required 40% diversion.

Land Use Change -

Sequestration -

Construction Off-road Equipment Mitigation - Dust BMPs and Tier 4 equipment

Mobile Land Use Mitigation -

Water Mitigation - CalGreen requirements

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	50

tblAreaCoating	Area_EF_Nonresidential_Interior	250	50
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	89.00
tblConstructionPhase	NumDays	300.00	522.00
tblConstructionPhase	NumDays	30.00	55.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	PhaseEndDate	3/14/2022	8/31/2023
tblConstructionPhase	PhaseEndDate	1/17/2022	7/18/2023
tblConstructionPhase	PhaseEndDate	9/28/2020	2/26/2021
tblConstructionPhase	PhaseEndDate	11/23/2020	7/16/2021
tblConstructionPhase	PhaseEndDate	2/14/2022	8/31/2023
tblConstructionPhase	PhaseEndDate	10/12/2020	2/26/2021
tblConstructionPhase	PhaseStartDate	2/15/2022	5/1/2023
tblConstructionPhase	PhaseStartDate	11/24/2020	7/19/2021
tblConstructionPhase	PhaseStartDate	9/1/2020	2/1/2021
tblConstructionPhase	PhaseStartDate	10/13/2020	5/1/2021
tblConstructionPhase	PhaseStartDate	1/18/2022	7/1/2023
tblConstructionPhase	PhaseStartDate	9/29/2020	2/1/2021
tblGrading	AcresOfGrading	189.00	11.90

tblGrading	MaterialExported	0.00	278,514.00
tblGrading	MaterialExported	0.00	28,000.00
tblLandUse	LandUseSquareFeet	290,400.00	125,000.00
tblLandUse	LotAcreage	6.67	0.95
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblSequestration	NumberOfNewTrees	0.00	157.00
tblSolidWaste	SolidWasteGenerationRate	37.20	40.80
tblSolidWaste	SolidWasteGenerationRate	109.50	337.50
tblSolidWaste	SolidWasteGenerationRate	27.36	367.20
tblTripsAndVMT	HaulingTripNumber	0.00	187,920.00
tblTripsAndVMT	VendorTripNumber	86.00	0.00
tblTripsAndVMT	WorkerTripNumber	181.00	600.00

tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	38.00	0.00
tblVehicleTrips	DV_TP	15.00	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	77.00	100.00
tblVehicleTrips	PR_TP	58.00	100.00
tblVehicleTrips	PR_TP	82.00	100.00
tblVehicleTrips	ST_TR	2.46	18.38
tblVehicleTrips	ST_TR	8.19	8.70
tblVehicleTrips	ST_TR	1.90	6.96
tblVehicleTrips	SU_TR	1.05	18.38
tblVehicleTrips	SU_TR	5.95	8.70
tblVehicleTrips	SU_TR	1.11	6.96
tblVehicleTrips	WD_TR	11.03	18.38
tblVehicleTrips	WD_TR	8.17	8.70
tblVehicleTrips	WD_TR	8.11	6.96

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	0.4398	4.2242	4.6930	6.6100e-003	0.0411	0.2665	0.3076	0.0109	0.2452	0.2561						
2021	11.2288	231.0961	86.9716	0.5833	41.6230	3.8866	45.5096	16.4350	3.5964	20.0313						
2022	8.7652	120.4883	76.7639	0.3923	16.0156	1.7356	17.7512	4.2086	1.6446	5.8531						
2023	36.4070	102.6472	91.2842	0.4099	24.3752	2.0017	26.3769	6.2688	1.8851	8.1539						
Maximum	**36.4070**	**231.0961**	**91.2842**	**0.5833**	**41.6230**	**3.8866**	**45.5096**	**16.4350**	**3.5964**	**20.0313**						

2.1 Overall Construction (Maximum Daily Emission)

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	0.0967	0.3430	4.8178	6.6100e-003	0.0411	0.0104	0.0515	0.0109	0.0104	0.0213						
2021	6.1840	169.1224	93.0043	0.5833	27.1641	0.6733	27.6077	8.0598	0.6513	8.4056						
2022	5.7905	93.1505	84.9073	0.3923	16.0156	0.3992	16.4148	4.2086	0.3860	4.5946						
2023	32.7742	67.8451	102.4375	0.4099	24.3752	0.3101	24.6853	6.2688	0.3025	6.5712						
Maximum	**32.7742**	**169.1224**	**102.4375**	**0.5833**	**27.1641**	**0.6733**	**27.6077**	**8.0598**	**0.6513**	**8.4056**						

	ROG	NOx	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	**21.10**	**27.92**	**-9.80**	**0.00**	**17.62**	**82.35**	**23.55**	**31.11**	**81.68**	**42.87**	**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	11.9073	5.6000e-004	0.0612	0.0000		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004						
Energy	0.3624	3.2945	2.7674	0.0198		0.2504	0.2504		0.2504	0.2504						
Mobile	7.0088	27.8786	84.4460	0.3094	30.4474	0.2436	30.6911	8.1364	0.2268	8.3632						
Total	**19.2785**	**31.1737**	**87.2746**	**0.3292**	**30.4474**	**0.4942**	**30.9417**	**8.1364**	**0.4774**	**8.6138**						

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.9073	5.6000e-004	0.0612	0.0000		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004						
Energy	0.3624	3.2945	2.7674	0.0198		0.2504	0.2504		0.2504	0.2504						
Mobile	6.1172	23.3524	64.9982	0.2218	21.3132	0.1789	21.4921	5.6955	0.1665	5.8620						
Total	**18.3869**	**26.6475**	**67.8268**	**0.2415**	**21.3132**	**0.4295**	**21.7427**	**5.6955**	**0.4171**	**6.1126**						

	ROG	NOx	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	**4.62**	**14.52**	**22.28**	**26.63**	**30.00**	**13.09**	**29.73**	**30.00**	**12.62**	**29.04**	**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	Underground Utilities	Trenching	9/1/2020	2/26/2021	5	129	
2	Demolition	Demolition	2/1/2021	2/26/2021	5	20	
3	Site Preparation	Site Preparation	2/1/2021	2/26/2021	5	20	
4	Grading	Grading	5/1/2021	7/16/2021	5	55	
5	Building Construction	Building Construction	7/19/2021	7/18/2023	5	522	
6	Architectural Coating	Architectural Coating	5/1/2023	8/31/2023	5	89	
7	Paving	Paving	7/1/2023	8/31/2023	5	44	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 11.9

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 787,500; Non-Residential Outdoor: 262,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Costa Verde Center Revitalization Project - San Diego County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	2	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	1	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	4	8.00	247	0.40
Grading	Scrapers	3	8.00	367	0.48
Building Construction	Welders	3	8.00	46	0.45
Underground Utilities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Off-Highway Trucks	2	8.00	402	0.38
Demolition	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Off-Highway Trucks	2	8.00	402	0.38
Building Construction	Excavators	1	8.00	158	0.38
Building Construction	Off-Highway Trucks	2	8.00	402	0.38
Building Construction	Rough Terrain Forklifts	4	8.00	100	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	1,179.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	8	20.00	0.00	3,500.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	11	28.00	0.00	34,814.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	16	600.00	0.00	187,920.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	36.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Underground Utilities - 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	0.4190	4.2103	4.5594	6.2100e-003		0.2662	0.2662		0.2449	0.2449						
Total	**0.4190**	**4.2103**	**4.5594**	**6.2100e-003**		**0.2662**	**0.2662**		**0.2449**	**0.2449**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0208	0.0139	0.1336	4.0000e-004	0.0411	2.9000e-004	0.0414	0.0109	2.7000e-004	0.0112						
Total	**0.0208**	**0.0139**	**0.1336**	**4.0000e-004**	**0.0411**	**2.9000e-004**	**0.0414**	**0.0109**	**2.7000e-004**	**0.0112**						

3.2 Underground Utilities - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0760	0.3292	4.6841	6.2100e-003		0.0101	0.0101		0.0101	0.0101						
Total	**0.0760**	**0.3292**	**4.6841**	**6.2100e-003**		**0.0101**	**0.0101**		**0.0101**	**0.0101**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0208	0.0139	0.1336	4.0000e-004	0.0411	2.9000e-004	0.0414	0.0109	2.7000e-004	0.0112						
Total	**0.0208**	**0.0139**	**0.1336**	**4.0000e-004**	**0.0411**	**2.9000e-004**	**0.0414**	**0.0109**	**2.7000e-004**	**0.0112**						

3.2 Underground Utilities - 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	0.3746	3.7916	4.5205	6.2100e-003		0.2236	0.2236		0.2057	0.2057						
Total	**0.3746**	**3.7916**	**4.5205**	**6.2100e-003**		**0.2236**	**0.2236**		**0.2057**	**0.2057**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0196	0.0126	0.1247	3.8000e-004	0.0411	2.8000e-004	0.0414	0.0109	2.6000e-004	0.0112						
Total	**0.0196**	**0.0126**	**0.1247**	**3.8000e-004**	**0.0411**	**2.8000e-004**	**0.0414**	**0.0109**	**2.6000e-004**	**0.0112**						

3.2 Underground Utilities - 2021

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	0.0760	0.3292	4.6841	6.2100e-003		0.0101	0.0101		0.0101	0.0101						
Total	**0.0760**	**0.3292**	**4.6841**	**6.2100e-003**		**0.0101**	**0.0101**		**0.0101**	**0.0101**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0196	0.0126	0.1247	3.8000e-004	0.0411	2.8000e-004	0.0414	0.0109	2.6000e-004	0.0112						
Total	**0.0196**	**0.0126**	**0.1247**	**3.8000e-004**	**0.0411**	**2.8000e-004**	**0.0414**	**0.0109**	**2.6000e-004**	**0.0112**						

3.3 Demolition - 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					12.9214	0.0000	12.9214	1.9568	0.0000	1.9568						
Off-Road	2.3980	21.7352	19.0251	0.0493		0.8970	0.8970		0.8391	0.8391						
Total	**2.3980**	**21.7352**	**19.0251**	**0.0493**	**12.9214**	**0.8970**	**13.8184**	**1.9568**	**0.8391**	**2.7958**						

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	0.4497	15.2412	3.9295	0.0447	1.0301	0.0471	1.0772	0.2823	0.0451	0.3274						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0588	0.0378	0.3740	1.1500e-003	0.1232	8.5000e-004	0.1241	0.0327	7.8000e-004	0.0335						
Total	**0.5085**	**15.2790**	**4.3035**	**0.0458**	**1.1533**	**0.0479**	**1.2012**	**0.3150**	**0.0458**	**0.3608**						

3.3 Demolition - 2021

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					5.8146	0.0000	5.8146	0.8805	0.0000	0.8805						
Off-Road	0.5903	2.5579	26.3849	0.0493		0.0787	0.0787		0.0787	0.0787						
Total	**0.5903**	**2.5579**	**26.3849**	**0.0493**	**5.8146**	**0.0787**	**5.8933**	**0.8805**	**0.0787**	**0.9592**						

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	0.4497	15.2412	3.9295	0.0447	1.0301	0.0471	1.0772	0.2823	0.0451	0.3274						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0588	0.0378	0.3740	1.1500e-003	0.1232	8.5000e-004	0.1241	0.0327	7.8000e-004	0.0335						
Total	**0.5085**	**15.2790**	**4.3035**	**0.0458**	**1.1533**	**0.0479**	**1.2012**	**0.3150**	**0.0458**	**0.3608**						

3.4 Site Preparation - 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					24.2851	0.0000	24.2851	13.2707	0.0000	13.2707						
Off-Road	4.9345	51.4684	25.1920	0.0466		2.5769	2.5769		2.3708	2.3708						
Total	**4.9345**	**51.4684**	**25.1920**	**0.0466**	**24.2851**	**2.5769**	**26.8620**	**13.2707**	**2.3708**	**15.6415**						

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	1.3349	45.2452	11.6651	0.1326	3.0579	0.1398	3.1977	0.8380	0.1337	0.9718						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0785	0.0505	0.4987	1.5300e-003	0.1643	1.1300e-003	0.1654	0.0436	1.0500e-003	0.0446						
Total	**1.4134**	**45.2957**	**12.1638**	**0.1341**	**3.2222**	**0.1409**	**3.3631**	**0.8816**	**0.1348**	**1.0164**						

3.4 Site Preparation - 2021

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					10.9283	0.0000	10.9283	5.9718	0.0000	5.9718						
Off-Road	0.5701	2.4706	24.7026	0.0466		0.0760	0.0760		0.0760	0.0760						
Total	**0.5701**	**2.4706**	**24.7026**	**0.0466**	**10.9283**	**0.0760**	**11.0043**	**5.9718**	**0.0760**	**6.0478**						

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	1.3349	45.2452	11.6651	0.1326	3.0579	0.1398	3.1977	0.8380	0.1337	0.9718						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0785	0.0505	0.4987	1.5300e-003	0.1643	1.1300e-003	0.1654	0.0436	1.0500e-003	0.0446						
Total	**1.4134**	**45.2957**	**12.1638**	**0.1341**	**3.2222**	**0.1409**	**3.3631**	**0.8816**	**0.1348**	**1.0164**						

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					6.8536	0.0000	6.8536	3.3826	0.0000	3.3826						
Off-Road	6.2905	67.3718	44.0803	0.1015		2.7952	2.7952		2.5716	2.5716						
Total	**6.2905**	**67.3718**	**44.0803**	**0.1015**	**6.8536**	**2.7952**	**9.6488**	**3.3826**	**2.5716**	**5.9541**						

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	4.8284	163.6537	42.1932	0.4797	11.0605	0.5056	11.5661	3.0312	0.4837	3.5149						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1098	0.0706	0.6981	2.1500e-003	0.2300	1.5900e-003	0.2316	0.0610	1.4600e-003	0.0625						
Total	**4.9383**	**163.7244**	**42.8913**	**0.4818**	**11.2906**	**0.5072**	**11.7977**	**3.0922**	**0.4852**	**3.5774**						

3.5 Grading - 2021

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					3.0841	0.0000	3.0841	1.5222	0.0000	1.5222						
Off-Road	1.2457	5.3981	50.1130	0.1015		0.1661	0.1661		0.1661	0.1661						
Total	**1.2457**	**5.3981**	**50.1130**	**0.1015**	**3.0841**	**0.1661**	**3.2502**	**1.5222**	**0.1661**	**1.6883**						

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	4.8284	163.6537	42.1932	0.4797	11.0605	0.5056	11.5661	3.0312	0.4837	3.5149						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1098	0.0706	0.6981	2.1500e-003	0.2300	1.5900e-003	0.2316	0.0610	1.4600e-003	0.0625						
Total	**4.9383**	**163.7244**	**42.8913**	**0.4818**	**11.2906**	**0.5072**	**11.7977**	**3.0922**	**0.4852**	**3.5774**						

3.6 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	4.4095	39.2078	39.8511	0.0794		1.7639	1.7639		1.6674	1.6674						
Total	**4.4095**	**39.2078**	**39.8511**	**0.0794**		**1.7639**	**1.7639**		**1.6674**	**1.6674**						

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	2.7461	93.0759	23.9968	0.2728	22.2352	0.2876	22.5228	5.6377	0.2751	5.9128						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	2.3535	1.5135	14.9595	0.0460	4.9289	0.0341	4.9629	1.3074	0.0314	1.3387						
Total	**5.0996**	**94.5894**	**38.9563**	**0.3188**	**27.1641**	**0.3216**	**27.4857**	**6.9450**	**0.3065**	**7.2515**						

3.6 Building Construction - 2021

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	0.9809	6.6929	47.2393	0.0794		0.1220	0.1220		0.1220	0.1220						
Total	**0.9809**	**6.6929**	**47.2393**	**0.0794**		**0.1220**	**0.1220**		**0.1220**	**0.1220**						

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	2.7461	93.0759	23.9968	0.2728	22.2352	0.2876	22.5228	5.6377	0.2751	5.9128						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	2.3535	1.5135	14.9595	0.0460	4.9289	0.0341	4.9629	1.3074	0.0314	1.3387						
Total	**5.0996**	**94.5894**	**38.9563**	**0.3188**	**27.1641**	**0.3216**	**27.4857**	**6.9450**	**0.3065**	**7.2515**						

3.6 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	3.9556	34.0306	39.0959	0.0794		1.4584	1.4584		1.3806	1.3806						
Total	**3.9556**	**34.0306**	**39.0959**	**0.0794**		**1.4584**	**1.4584**		**1.3806**	**1.3806**						

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	2.5793	85.0779	23.7871	0.2685	11.0867	0.2439	11.3306	2.9012	0.2333	3.1345						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	2.2303	1.3798	13.8810	0.0443	4.9289	0.0333	4.9622	1.3074	0.0307	1.3380						
Total	**4.8096**	**86.4577**	**37.6680**	**0.3128**	**16.0156**	**0.2772**	**16.2928**	**4.2086**	**0.2640**	**4.4726**						

3.6 Building Construction - 2022

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	0.9809	6.6929	47.2393	0.0794		0.1220	0.1220		0.1220	0.1220						
Total	**0.9809**	**6.6929**	**47.2393**	**0.0794**		**0.1220**	**0.1220**		**0.1220**	**0.1220**						

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	2.5793	85.0779	23.7871	0.2685	11.0867	0.2439	11.3306	2.9012	0.2333	3.1345						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	2.2303	1.3798	13.8810	0.0443	4.9289	0.0333	4.9622	1.3074	0.0307	1.3380						
Total	**4.8096**	**86.4577**	**37.6680**	**0.3128**	**16.0156**	**0.2772**	**16.2928**	**4.2086**	**0.2640**	**4.4726**						

3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6994	31.3445	38.8188	0.0795		1.2740	1.2740		1.2058	1.2058						
Total	**3.6994**	**31.3445**	**38.8188**	**0.0795**		**1.2740**	**1.2740**		**1.2058**	**1.2058**						

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	1.8441	58.4414	22.1102	0.2584	19.0274	0.1113	19.1387	4.8503	0.1065	4.9567						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	2.1177	1.2597	12.8663	0.0426	4.9289	0.0327	4.9615	1.3074	0.0301	1.3374						
Total	**3.9619**	**59.7010**	**34.9765**	**0.3011**	**23.9563**	**0.1439**	**24.1002**	**6.1576**	**0.1365**	**6.2942**						

3.6 Building Construction - 2023

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	0.9809	6.6929	47.2393	0.0795		0.1220	0.1220		0.1220	0.1220						
Total	**0.9809**	**6.6929**	**47.2393**	**0.0795**		**0.1220**	**0.1220**		**0.1220**	**0.1220**						

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	1.8441	58.4414	22.1102	0.2584	19.0274	0.1113	19.1387	4.8503	0.1065	4.9567						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	2.1177	1.2597	12.8663	0.0426	4.9289	0.0327	4.9615	1.3074	0.0301	1.3374						
Total	**3.9619**	**59.7010**	**34.9765**	**0.3011**	**23.9563**	**0.1439**	**24.1002**	**6.1576**	**0.1365**	**6.2942**						

3.7 Architectural Coating - 2023

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	27.3413					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708						
Total	**27.5330**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1271	0.0756	0.7720	2.5600e-003	0.2957	1.9600e-003	0.2977	0.0784	1.8000e-003	0.0803						
Total	**0.1271**	**0.0756**	**0.7720**	**2.5600e-003**	**0.2957**	**1.9600e-003**	**0.2977**	**0.0784**	**1.8000e-003**	**0.0803**						

3.7 Architectural Coating - 2023

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	27.3413					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003						
Total	**27.3710**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1271	0.0756	0.7720	2.5600e-003	0.2957	1.9600e-003	0.2977	0.0784	1.8000e-003	0.0803						
Total	**0.1271**	**0.0756**	**0.7720**	**2.5600e-003**	**0.2957**	**1.9600e-003**	**0.2977**	**0.0784**	**1.8000e-003**	**0.0803**						

3.8 Paving - 2023

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	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0529	0.0315	0.3217	1.0700e-003	0.1232	8.2000e-004	0.1240	0.0327	7.5000e-004	0.0334						
Total	**0.0529**	**0.0315**	**0.3217**	**1.0700e-003**	**0.1232**	**8.2000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**						

3.8 Paving - 2023

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	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**0.2805**	**1.2154**	**17.2957**	**0.0228**		**0.0374**	**0.0374**		**0.0374**	**0.0374**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0529	0.0315	0.3217	1.0700e-003	0.1232	8.2000e-004	0.1240	0.0327	7.5000e-004	0.0334						
Total	**0.0529**	**0.0315**	**0.3217**	**1.0700e-003**	**0.1232**	**8.2000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**						

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	6.1172	23.3524	64.9982	0.2218	21.3132	0.1789	21.4921	5.6955	0.1665	5.8620						
Unmitigated	7.0088	27.8786	84.4460	0.3094	30.4474	0.2436	30.6911	8.1364	0.2268	8.3632						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	735.20	735.20	735.20	2,147,860	1,503,502
Hotel	1,740.00	1,740.00	1740.00	4,893,846	3,425,692
Research & Development	2,505.60	2,505.60	2505.60	7,320,020	5,124,014
Total	4,980.80	4,980.80	4,980.80	14,361,727	10,053,209

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	100	0	0
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	100	0	0
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.606234	0.039465	0.179154	0.102641	0.014368	0.005395	0.016820	0.024508	0.001929	0.001857	0.005869	0.000761	0.000998
Hotel	0.606234	0.039465	0.179154	0.102641	0.014368	0.005395	0.016820	0.024508	0.001929	0.001857	0.005869	0.000761	0.000998
Research & Development	0.606234	0.039465	0.179154	0.102641	0.014368	0.005395	0.016820	0.024508	0.001929	0.001857	0.005869	0.000761	0.000998

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.3624	3.2945	2.7674	0.0198		0.2504	0.2504		0.2504	0.2504						
NaturalGas Unmitigated	0.3624	3.2945	2.7674	0.0198		0.2504	0.2504		0.2504	0.2504						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	2212.6	0.0239	0.2169	0.1822	1.3000e-003		0.0165	0.0165		0.0165	0.0165						
Hotel	19989.7	0.2156	1.9598	1.6462	0.0118		0.1489	0.1489		0.1489	0.1489						
Research & Development	11401.6	0.1230	1.1178	0.9390	6.7100e-003		0.0850	0.0850		0.0850	0.0850						
Total		**0.3624**	**3.2945**	**2.7674**	**0.0198**		**0.2504**	**0.2504**		**0.2504**	**0.2504**						

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	2.2126	0.0239	0.2169	0.1822	1.3000e-003		0.0165	0.0165		0.0165	0.0165						
Hotel	19.9897	0.2156	1.9598	1.6462	0.0118		0.1489	0.1489		0.1489	0.1489						
Research & Development	11.4016	0.1230	1.1178	0.9390	6.7100e-003		0.0850	0.0850		0.0850	0.0850						
Total		**0.3624**	**3.2945**	**2.7674**	**0.0198**		**0.2504**	**0.2504**		**0.2504**	**0.2504**						

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	11.9073	5.6000e-004	0.0612	0.0000		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004						
Unmitigated	11.9073	5.6000e-004	0.0612	0.0000		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6667					0.0000	0.0000		0.0000	0.0000						
Consumer Products	11.2350					0.0000	0.0000		0.0000	0.0000						
Landscaping	5.6500e-003	5.6000e-004	0.0612	0.0000		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004						
Total	**11.9073**	**5.6000e-004**	**0.0612**	**0.0000**		**2.2000e-004**	**2.2000e-004**		**2.2000e-004**	**2.2000e-004**						

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6667					0.0000	0.0000		0.0000	0.0000						
Consumer Products	11.2350					0.0000	0.0000		0.0000	0.0000						
Landscaping	5.6500e-003	5.6000e-004	0.0612	0.0000		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004						
Total	**11.9073**	**5.6000e-004**	**0.0612**	**0.0000**		**2.2000e-004**	**2.2000e-004**		**2.2000e-004**	**2.2000e-004**						

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation