APPENDIX B: AIR QUALITY AND GREENHOUSE GAS IMPACT ANALYSIS

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AIR QUALITY AND GREENHOUSE GAS IMPACT ANALYSIS

CALIFORNIA BAPTIST UNIVERSITY SPECIFIC PLAN

CITY OF RIVERSIDE, CALIFORNIA

LSA

December 2017

AIR QUALITY AND GREENHOUSE GAS IMPACT ANALYSIS

CALIFORNIA BAPTIST UNIVERSITY SPECIFIC PLAN

CITY OF RIVERSIDE, CALIFORNIA

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Project No. CTR1501

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EXECUTIVE SUMMARY

LSA was retained to prepare an air quality and greenhouse gas (GHG) analysis for California Baptist University Specific Plan (CBUSP) project to be located in the City of Riverside (City) in Riverside County (County), California.

This air quality and GHG impact analysis provides a discussion of the proposed project, the physical setting of the project area, and the regulatory framework for air quality. The report provides data on existing air quality and evaluates potential air quality and GHG impacts associated with the proposed specific plan. Modeled air quality levels are based on the trip generation data from the *California Baptist University Traffic Impact Analysis* (Rick Engineering, December 2016).

Emissions with regional effects during project construction, calculated with the California Emission Estimator Model (CalEEMod; Version 2016.3.2), would not exceed criteria pollutant thresholds established by the South Coast Air Quality Management District (SCAQMD). Compliance with SCAQMD Rules and Regulations during construction will reduce construction-related air quality impacts from fugitive dust emissions and construction equipment emissions. Standard dust suppression measures have been identified for short-term construction to meet the SCAQMD emissions thresholds. The proposed project would also not exceed the localized significance thresholds (LSTs) that were developed to assess localized air quality impacts associated with project-related pollutant emissions.

Pollutant emissions from project operation, also calculated with CalEEMod, would not exceed the SCAQMD mass daily thresholds for any criteria pollutants. LSTs would not be exceeded by long-term emissions from operation of the project. Historical air quality data show that existing carbon monoxide (CO) levels for the project area and the general vicinity do not exceed either State of California (State) or federal ambient air quality standards. The proposed project would not result in any significant impact in CO concentrations at intersections in the project vicinity.

The proposed project is located in Riverside County, which has been found to have serpentine and ultramafic rock in its soil. However, no such rock has been identified in the project vicinity in the past 25 years. Therefore, the potential risk for naturally occurring asbestos (NOA) during project construction is small and less than significant.

The potential of the project to affect global climate change (GCC) is also addressed. Short-term construction and long-term operational emissions of the principal GHGs, including carbon dioxide and methane, are quantified, and their significance relative to the California Air Resources Board (ARB) Scoping Plan is discussed. The proposed project would not exceed any GHG emissions thresholds or conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

This evaluation was prepared in conformance with appropriate standards, utilizing procedures and methodologies in the SCAQMD *California Environmental Quality Act (CEQA) Air Quality Handbook* (SCAQMD 1993) and associated updates. Air quality data posted on the respective websites of the ARB and the United States Environmental Protection Agency (EPA) are included to document the local air quality environment.

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LIST OF ABBREVIATIONS AND ACRONYMS

°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter
AAQS	ambient air quality standards
AB	Assembly Bill
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
Basin	South Coast Air Basin
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CalEEMod	California Emission Estimator Model
CalRecycle	California Department of Resources Recycling and Recovery
CAPCOA	California Air Pollution Control Officers Association
CCAA	California Clean Air Act
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH_4	methane
City	Riverside
CO	carbon monoxide
County	County of Riverside
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
EPA	United States Environmental Protection Agency
GCC	global climate change
GHG	greenhouse gas
GWP	global warming potential
H_2S	hydrogen sulfide
lbs/day	pounds per day
LOS	level of service
LST	localized significance threshold
mg/m^3	milligrams per cubic meter
MT	metric tons
MT CO_2e	metric tons of carbon dioxide equivalent
MT CO_2e/yr	metric tons of carbon dioxide equivalent per year
MT/yr	metric tons per year

N_2O	nitrous oxide
NAAQS	national ambient air quality standards
NO	nitric oxide
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
O_3	ozone
OMB	White House Office of Management and Budget
OPR	Office of Planning and Research
PFCs	perfluorocarbons
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
ppm	parts per million
ROCs	reactive organic compounds
ROGs	reactive organic gases
RPS	Renewable Portfolio Standard
RPS Program	California Renewable Portfolio Standard Program
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
sf	square feet/foot
SCS	Sustainable Communities Strategy
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_X	sulfur oxides
SRA	Source Receptor Area
State	State of California
VOC	volatile organic compounds

PROJECT DESCRIPTION

INTRODUCTION

This air quality and greenhouse gas (GHG) impact analysis has been prepared to evaluate the potential air quality impacts associated with the proposed amendment to the California Baptist University Specific Plan (CBUSP)) in Riverside (City), Riverside County, California. This report provides a specific plan-level air quality and GHG impact analysis by examining the impacts of the proposed project on adjacent sensitive land uses, as well as the impacts of the proposed project on the regional air quality. This assessment also evaluates the mitigation measures required. Guidelines identified by the South Coast Air Quality Management District (SCAQMD) in its *California Environmental Quality Act (CEQA) Air Quality Handbook* (SCAQMD 1993) and associated updates were followed for purposes of this air quality and GHG impact analysis.

REGIONAL PROJECT LOCATION

The California Baptist University (CBU) encompasses approximately 167 acres and is developed with academic, residential, recreational, open space, parking and industrial uses (Figure 1 - Regional and Project Location and Figure 2 - Aerial View of the California Baptist University Project Site). Land uses surrounding the subject area include single-family homes, apartments, offices, schools, open space, and religious institutions.

The University is comprised of the CBU Specific Plan Zone that includes the CBUSP-1 and CBUSP-2 subareas (Figure 3 - California Baptist University Specific Plan Zone and Subareas). The CBUSP-1 subarea is defined as the properties within the original campus core (the block bounded by Magnolia Avenue, Diana Avenue, Adams Street, and Monroe Street) plus the Health Sciences Campus on the west side of Monroe Street (formerly Riverside Christian High School and daycare center). The CBUSP-2 subarea includes three properties on the north side of Magnolia Avenue plus the Engineering Building on the east side of Adams Street. State Route (SR) 91 defines the southern side, with general commercial uses located south of SR-91, including car dealerships.

PROJECT DESCRIPTION

The CBU campus has continued to grow, both in area and student population, since the adoption of the CBUSP in 2013. The proposed project is a comprehensive CBUSP Amendment which would accommodate a projected increase in student enrollment from 8,414 to 12,000 total students by the year 2025 under a more urban-intensity type of development. The anticipated growth in student population would be due to the expansion of the curriculum offered. CBU's student population consists of four student categories: traditional students, graduate students, online students, and intensive English students.

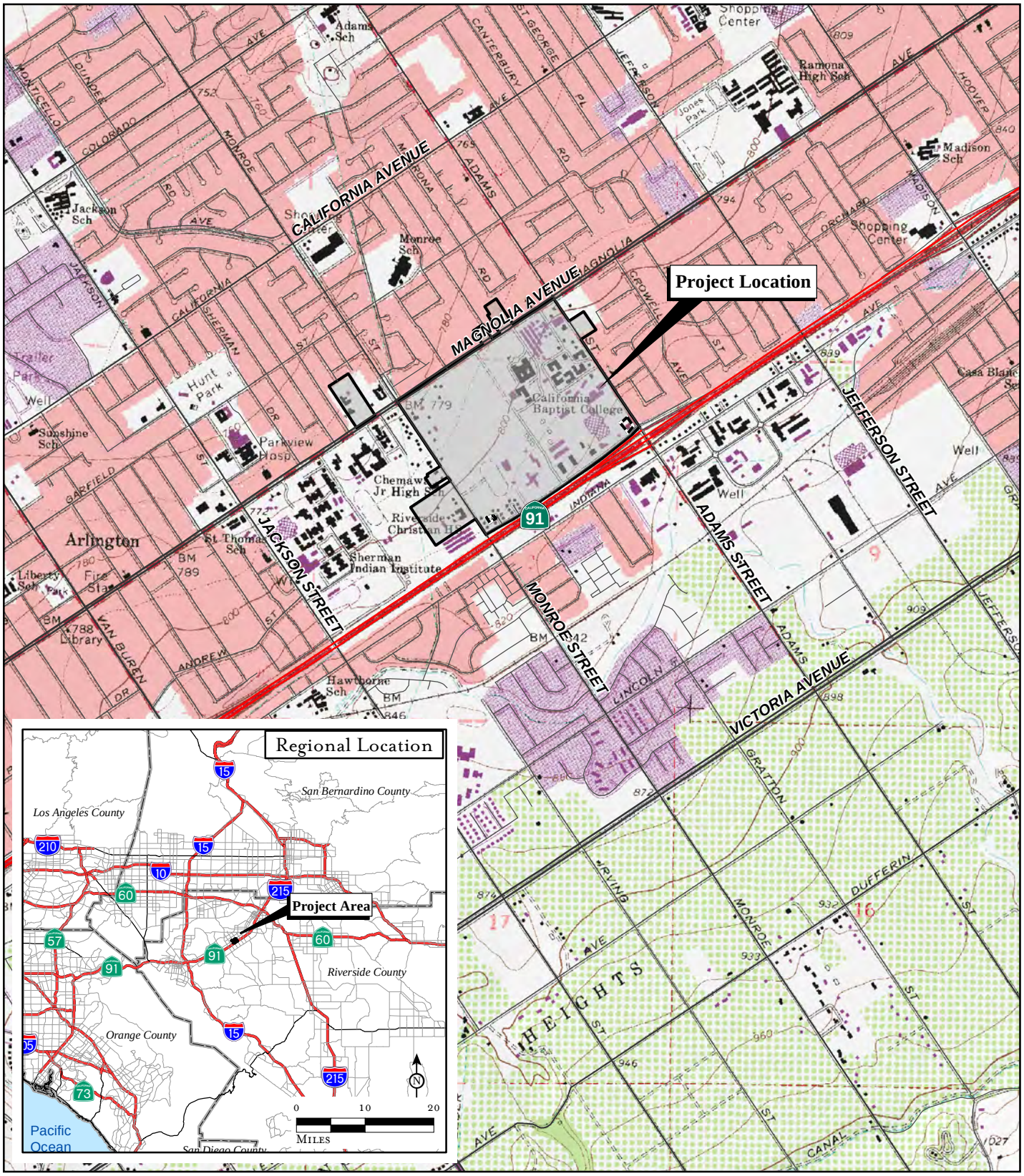

FIGURE 1

California Baptist University
Specific Plan Amendment Project

Regional and Project Location

SOURCE: USGS 7.5' Quad: Riverside West (1980), CA; Riverside County, 2014

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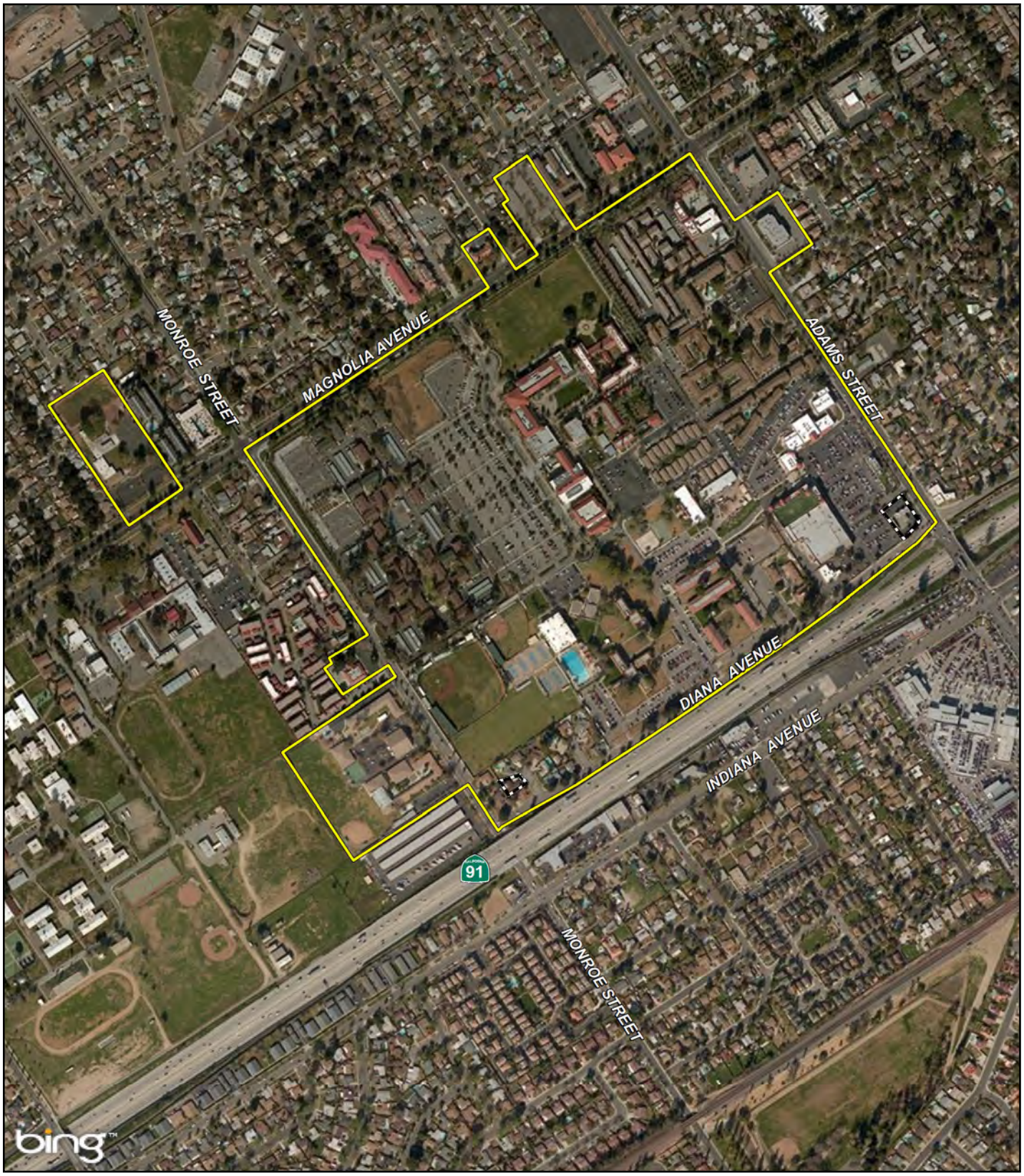

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LEGEND

Project Area

Not A Part

N

0 350 700

Feet

SOURCE: Bing Aerial, 2016.

FIGURE 2

California Baptist University
Specific Plan Amendment Project

Aerial View of Project Area

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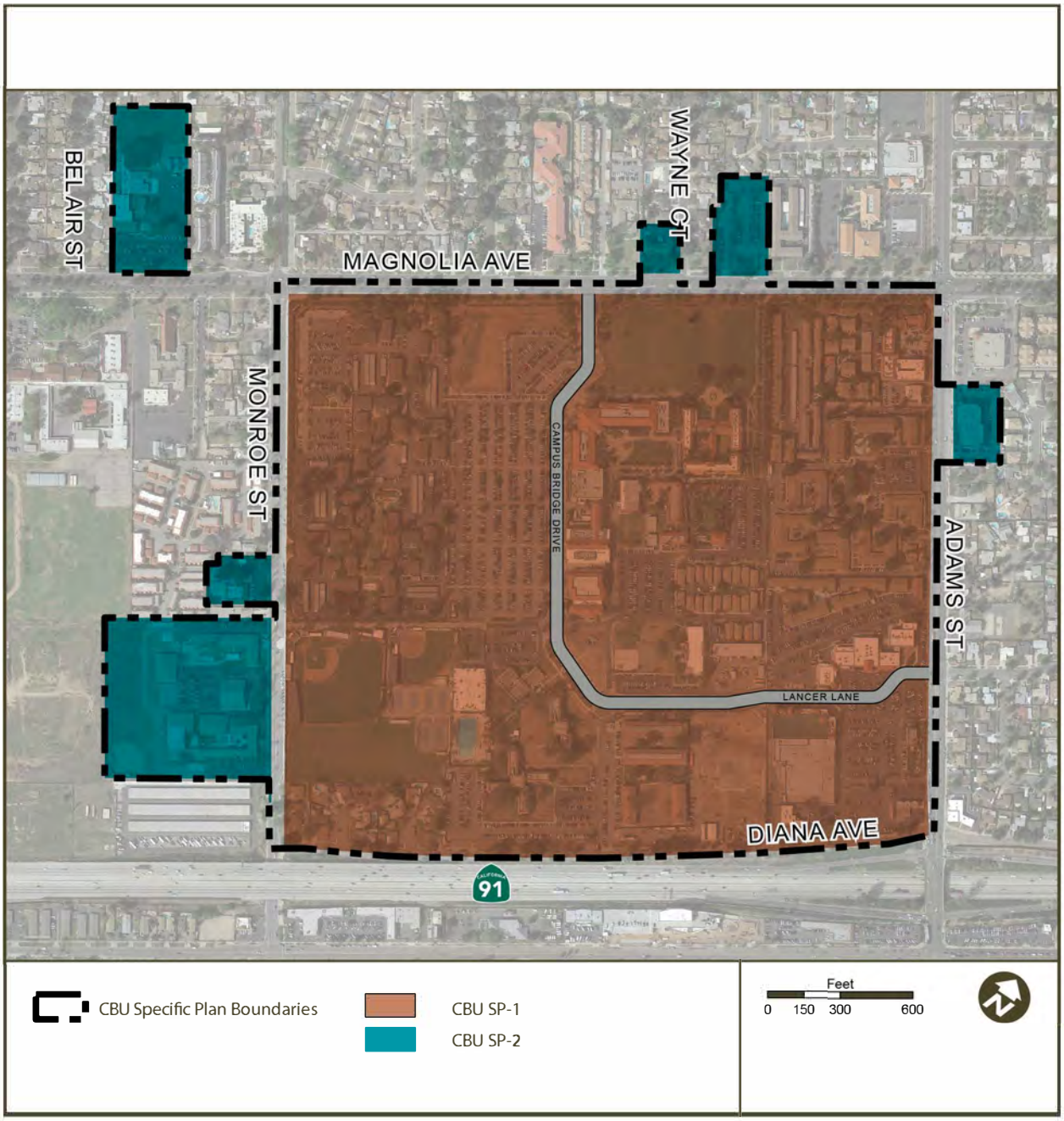

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FIGURE 3

California Baptist University
Specific Plan Amendment Project

California Baptist University Specific Plan Zone and Subdistricts

SOURCE: *California Baptist University Specific Plan, Public Review Draft*, City of Riverside, July 2018.
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Table A outlines the projected student enrollment growth over the next 10 years.

Table A: Student Population Projections

Student Population Projections					
Year	Traditional	Graduate	Online	Intensive English	Total Enrollment
2015	5,201	1,268	1,921	24	8,414
2020	6,201	1,543	2,421	44	10,209
2025	7,201	1,813	2,921	65	12,000

To achieve the University's goal of 12,000 enrolled students by the year 2025, new and reconfigured educational, housing, administrative support, athletic, and other facilities will be required within the main campus area. Support and ancillary facilities may also be established on University-owned properties not contiguous to the main campus (i.e., Transition Areas). To accommodate the reconfigured educational fields and future academic purposes, CBU anticipates providing an additional 146,000 square feet of building area to the already existing 815,114 square feet of building area.

Future development within the CBUSP Planning Area will take into consideration the relationship and compatibility of the CBU campus with its surroundings. A single zoning district—the CBU Specific Plan Zone—is proposed for the entire Planning Area. Two subareas are defined—CBUSP-1 and CBUSP-2—to regulate building height, density, and setbacks. The CBUSP-1 and CBUSP-2 subareas permit the same land uses, but have different height and density standards. Previously referenced Figure 3 illustrates the proposed CBUSP-1 and CBUSP-2 subareas as well as the CBU Specific Plan Zone.

Implementation of the proposed CBUSP, as amended, provides a framework to guide development of campus boundary and facility expansions in order to strengthen the campus identity. Included in the CBUSP, as amended, are design guidelines and elements for the CBU Core Campus and the community. Although the project does not propose a specific development project, it does propose a framework under which specific development projects will be planned, designed, and executed in the future in order to expand campus facilities to facilitate the anticipated increase in student enrollment.

Future development and improvements within the CBUSP Planning Area (i.e., CBUSP-1 and CBUSP-2 subareas) would entail approximately 246,000 square feet of academic/recreation facilities and 560,000 square feet of parking structure(s) with integrated office space. As future projects, including improvements to or demolition of existing campus facilities, are proposed pursuant to the CBUSP, as amended, permits or other forms of approval from public agencies or other entities prior to construction would be required, as applicable to specific projects, prior to their construction.

SENSITIVE RECEPTORS

Air quality varies as a direct function of the amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. Air quality problems arise when the rate of pollutant emissions exceeds the rate of dispersion. Reduced visibility, eye irritation, and adverse health impacts upon those persons termed "sensitive receptors" are the most serious hazards of existing air quality conditions in the area. Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. People most likely to be affected by air pollution, as identified by the ARB, may include children, the elderly, and people with cardiovascular and chronic respiratory diseases. Sensitive receptors may include residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes.

The nearest sensitive receptors to the project site are existing on-campus student housing, as well as existing single-family and multi-family residences located adjacent to the properties within the CBUSP Planning Area (i.e., CBUSP-1 and CBUSP-2 subareas), some of which are between 10 and 25 feet from select CBU properties (e.g., River Springs Charter School and Engineering Building, respectively).

PROJECT SETTING

REGIONAL AIR QUALITY

The project site is located in the City of Riverside in the non-desert portion of the County of Riverside, California, which is part of the South Coast Air Basin (Basin) and is under the jurisdiction of the SCAQMD. The air quality assessment for the proposed project includes the estimation of the emissions associated with short-term construction and long-term operation of the proposed project.

Both the State of California and the federal government have established health-based ambient air quality standards (AAQS) for seven air pollutants. As detailed in Table B, these pollutants include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than 10 microns in size (PM_{10}), particulate matter less than 2.5 microns in size ($PM_{2.5}$), and lead. In addition, the State has set standards for sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table C summarizes the primary health effects and sources of common air pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety (United States Environmental Protection Agency [EPA]), these health effects will not occur unless the standards are exceeded by a large margin or for a prolonged period of time. State AAQS are typically more stringent than federal AAQS. Among the pollutants, O_3 and particulate matter ($PM_{2.5}$ and PM_{10}) are considered pollutants with regional effects, while the others have more localized effects.

The California Clean Air Act (CCAA) provides SCAQMD and other air districts with the authority to manage transportation activities at indirect sources. Indirect sources of pollution include any facility, building, structure, or installation, or combination thereof, that attracts or generates mobile source emissions of any pollutant. In addition, area source emissions that are generated when minor sources collectively emit a substantial amount of pollution are also managed by the local air districts. Examples of this would be the motor vehicles at an intersection, a mall, and on highways. SCAQMD also regulates stationary sources of pollution throughout its jurisdictional area. Direct emissions from motor vehicles are regulated by the California Air Resources Board (ARB).

Table B: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)[8]	1-Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM_{10})[9]	24-Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter ($PM_{2.5}$)[9]	24-Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1-Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8-Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[10]	1-Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (for certain areas)[11]	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	24-Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[11]	—	
	3-Hour	—		—	0.5 ppm (1300 µg/m^3)	
	1-Hour	0.25 ppm (655 µg/m^3)		75 ppb (196 µg/m^3)	—	
Lead[12,13]	30-Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[13]	Same as Primary Standard	
	Rolling 3-Month Average[11]	—		0.15 µg/m^3		
Visibility-Reducing Particles[14]	8-Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24-Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24-Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Source: Ambient Air Quality Standards (ARB 2016). Website: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf, accessed December 2017.

Footnotes are provided on the following page.

[1] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility-reducing particles) are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth-highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the EPA for further clarification and current national policies.

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

[4] Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

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

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

[7] Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

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

[9] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

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

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

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[12] The ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

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

[14] In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

°C = degrees Celsius
ARB = California Air Resources Board
EPA = United States Environmental Protection Agency
µg/m^3 = micrograms per cubic meter
mg/m^3 = milligrams per cubic meter
ppm = parts per million
ppb = parts per billion

Table C: Summary of Health Effects of the Major Criteria Air Pollutants

Pollutant	Health Effects	Examples of Sources
Particulate Matter ($PM_{2.5}$ and PM_{10}: less than or equal to 2.5 or 10 microns, respectively)	• Hospitalizations for worsened heart diseases • Emergency room visits for asthma • Premature death	• Cars and trucks (especially diesels) • Fireplaces, wood stoves • Windblown dust from roadways, agriculture, and construction
Ozone (O_3)	• Cough, chest tightness • Difficulty taking a deep breath • Worsened asthma symptoms • Lung inflammation	• Precursor sources[1]: motor vehicles, industrial emissions, and consumer products
Carbon Monoxide (CO)	• Chest pain in heart patients[2] • Headaches, nausea[2] • Reduced mental alertness[2] • Death at very high levels[2]	• Any source that burns fuel, such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Nitrogen Dioxide (NO_2)	• Increased response to allergens	• See carbon monoxide sources
Toxic Air Contaminants	• Cancer • Chronic eye, lung, or skin irritation • Neurological and reproductive disorders	• Cars and trucks (especially diesels) • Industrial sources such as chrome platers • Neighborhood businesses such as dry cleaners and service stations • Building materials and products

Source: ARB Fact Sheet: Air Pollution and Health. Website: http://www.arb.ca.gov/research/health/fs/fs1/fs1.htm, accessed December 2017.

[1] Ozone is not generated directly by these sources. Rather, chemicals emitted by these precursor sources react with sunlight to form ozone in the atmosphere.

[2] Health effects from CO exposures occur at levels considerably higher than ambient.

ARB = California Air Resources Board

Climate/Meteorology

Air quality in the planning area is not only affected by various emission sources (e.g., mobile and industry), but also by atmospheric conditions (e.g., wind speed, wind direction, temperature, and rainfall). The combination of topography, low mixing height, abundant sunshine, and emissions from the second-largest urban area in the United States gives the Basin the worst air pollution problem in the nation.

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station closest to the site with complete weather data is the Riverside-Fire Station 3, which provides sufficient data for average temperatures in the project area. Riverside-Fire Station 3[1] shows that the monthly average maximum temperature recorded ranged from 66.8°F in January to 94.4°F in August, with an annual average maximum of 79.5°F. The monthly average minimum temperature recorded at this station ranged from 39.1°F in January to 59.6°F in August, with an annual average minimum of 48.6°F. January is typically the coldest month, and July and August are typically the warmest months in this area of the Basin.

[1] Western Regional Climate Center. Website: www.wrcc.dri.edu, accessed December 2017.

The majority of annual rainfall in the Basin occurs between November and April. Summer rainfall is minimal and is generally limited to scattered thundershowers in coastal regions and slightly heavier showers in the eastern portion of the Basin and along the coastal side of the mountains. Riverside-Fire Station 3's monitored precipitation shows that average monthly rainfall varied from 2.20 inches in February to 0.44 inch or less from May to October, with an annual total of 10.21 inches. Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

The Basin experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific high. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. This phenomenon is observed in mid-afternoon to late afternoon on hot summer days, when the smog appears to clear up suddenly. Winter inversions frequently break by midmorning.

Winds in the vicinity of the project area blow predominantly from the south-southwest, with relatively low velocities. Wind speeds in the project area average about 5 miles per hour (mph). Summer wind speeds average slightly higher than winter wind speeds. Low average wind speeds, together with a persistent temperature inversion limit the vertical dispersion of air pollutants throughout the Basin. Strong, dry, north or northeasterly winds, known as Santa Ana winds, occur during the fall and winter months, dispersing air contaminants. The Santa Ana conditions tend to last for several days at a time.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly on shore into Riverside and San Bernardino Counties. In the winter, the greatest pollution problems are CO and nitrogen oxides (NO_X) because of extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and NO_X to form photochemical smog.

Description of Global Climate Change and its Sources

Global climate change (GCC) is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other significant changes in climate (e.g., precipitation or wind) that last for an extended period of time. The term "global climate change" is often used interchangeably with the term "global warming," but "global climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures.

Climate change refers to any change in measures of weather (e.g., temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from natural factors (e.g., changes in the sun's intensity), natural processes within the climate system (e.g., changes in ocean circulation), or human activities (e.g., the burning of fossil fuels, land

clearing, or agriculture). The primary observed effect of GCC has been a rise in the average global tropospheric[1] temperature of 0.36°F per decade, determined from meteorological measurements worldwide between 1990 and 2005. Climate change modeling shows that further warming may occur, which may induce additional changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and the environment of the State could include higher sea levels, drier or wetter weather, changes in ocean salinity, changes in wind patterns, or more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and increased intensity of tropical cyclones. Specific effects in the State might include a decline in the Sierra Nevada snowpack, erosion of the State's coastline, and seawater intrusion in the San Joaquin Delta.

Global surface temperatures have risen by 1.33°F ±0.32°F over the last 100 years. The rate of warming over the last 50 years is almost double that over the last 100 years (Intergovernmental Panel on Climate Change [IPCC] 2013). The latest projections, based on state-of-the-art climate models, indicate that temperatures in the State are expected to rise 3–10.5°F by the end of the century (State of California 2013). The prevailing scientific opinion on climate change is that "most of the warming observed over the last 60 years is attributable to human activities" (IPCC 2013). Increased amounts of carbon dioxide (CO_2) and other greenhouse gases (GHGs) are the primary causes of the human-induced component of warming. The observed warming effect associated with the presence of GHGs in the atmosphere (from either natural or human sources) is often referred to as "the greenhouse effect."[2]

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced GCC are:[3]

- CO_2
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur hexafluoride (SF_6)

Over the last 200 years, human activities have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, which some scientists believe can cause causing

1 The troposphere is the zone of the atmosphere characterized by water vapor, weather, winds, and decreasing temperature with increasing altitude.

2 The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse lets heat from sunlight in and reduces the amount of heat that escapes, GHGs like CO_2, CH_4, and N_2O in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, the *naturally occurring* greenhouse effect is necessary to keep our planet at a comfortable temperature.

3 The GHGs listed are consistent with the definition in Assembly Bill 32 (Government Code 38505), as discussed later in this section.

global warming. While GHGs produced by human activities include naturally occurring GHGs (e.g., CO_2, CH_4, and N_2O), some gases (e.g., HFCs, PFCs, and SF_6) are completely new to the atmosphere. Certain other gases (e.g., water vapor) are short-lived in the atmosphere compared to these GHGs, which remain in the atmosphere for significant periods of time and contribute to climate change in the long term. Water vapor is generally excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes (e.g., oceanic evaporation). For the purposes of this air quality study, the term "GHGs" will refer collectively to the six gases identified in the bulleted list provided above.

These gases vary considerably in terms of global warming potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas in absorbing infrared radiation and the length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of metric tons[1] of "CO_2 equivalents" (MT CO_2e). For example, N_2O is 265 times more potent at contributing to global warming than CO_2. Table D identifies the GWP for each GHG analyzed in this report.

Table D: Global Warming Potential for Selected Greenhouse Gases

Pollutant	Lifetime (Years)	Global Warming Potential (100-year)[1]
Carbon Dioxide (CO_2)	~100[2]	1
Methane (CH_4)	12	28
Nitrous Oxide (N_2O)	121	265

Source: ARB. First Update to the Climate Change Scoping Plan (2014).

[1] The 100-year global warming potential estimates are from Section 8.7.1.2 of The Global Warming Potential Concept in the IPCC 2013 Fifth Assessment Report (AR5). Website: http://www.ipcc.ch/report/ar5/wg1/, accessed December 2017.

[2] CO_2 has a variable atmospheric lifetime and cannot be readily approximated as a single number.

ARB = California Air Resources Board
CO_2 = carbon dioxide
IPCC = Intergovernmental Panel on Climate Change

The following discussion summarizes the characteristics of the six primary GHGs.

Carbon Dioxide

In the atmosphere, carbon generally exists in its oxidized form, as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals, and plants; volcanic outgassing; decomposition of organic matter; and evaporation from the oceans. Human-caused sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. The Earth maintains a natural carbon balance, and when concentrations of CO_2 are upset, the system gradually returns to its natural state through natural processes. Natural changes

[1] A metric ton is equivalent to approximately 1.1 tons.

to the carbon cycle work slowly, especially compared to the rapid rate at which humans are adding CO_2 to the atmosphere. Natural removal processes (e.g., photosynthesis by land- and ocean-dwelling plant species) cannot keep pace with this extra input of human-made CO_2, and consequently the gas is building up in the atmosphere. The concentration of CO_2 in the atmosphere has risen approximately 30 percent since the late 1800s[1].

The transportation sector remained the largest source of GHG emissions in 2014, representing 36 percent of the State's GHG emission inventory[2]. The largest emissions category within the transportation sector is on-road, which consists of passenger vehicles (cars, motorcycles, and light-duty trucks) and heavy-duty trucks and buses. Emissions from on-road sources constitute more than 92 percent of the transportation sector total. Industry and electricity generation were the State's second- and third-largest categories of GHG emissions, respectively.

Methane

CH_4 is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources of CH_4 include fires, geologic processes, and bacteria that produce CH_4 in a variety of settings (most notably, wetlands) (EPA 2010). Anthropogenic sources include rice cultivation, livestock, landfills and waste treatment, biomass burning, and fossil fuel combustion (e.g., the burning of coal, oil, and natural gas). As with CO_2, the major removal process of atmospheric CH_4—a chemical breakdown in the atmosphere—cannot keep pace with source emissions, and CH_4 concentrations in the atmosphere are increasing.

Nitrous Oxide

N_2O is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. N_2O is also a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion sources emit N_2O. The quantity of N_2O emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in the State.

Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride

HFCs are primarily used as substitutes for O_3-depleting substances regulated under the Montreal Protocol.[3] PFCs and SF_6 are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium

1 California Environmental Protection Agency. Climate Action Team Report to Governor Schwarzenegger and the Legislature. Website: http://www.climatechange.ca.gov/climate_action_team/reports/2006report/2006-04-03_FINAL_CAT_REPORT.PDF, accessed December 2017.

2 California Environmental Protection Agency. Air Resources Board. California GHG Emission Inventory. Website: https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2014/ghg_inventory_trends_00-14_20160617.pdf, accessed December 2017.

3 The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the O_3 layer by phasing out the production of several groups of halogenated hydrocarbons that are believed to be responsible for O_3 depletion and are also potent GHGs.

casting. There is no aluminum or magnesium production in the State; however, the rapid growth in the semiconductor industry, which is active in the State, has led to greater use of PFCs. However, there are no known project-related emissions of these three GHGs; therefore, these substances are not discussed further in this analysis.

Emissions Sources and Inventories

An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, national, State, and local GHG emission inventories. However, because GHGs persist for a long time in the atmosphere (Table D), accumulate over time, and are generally well mixed, their impact on the atmosphere and climate cannot be tied to a specific point of emission.

Global Emissions

Worldwide emissions of GHGs in 2012 totaled 29 billion metric tons of carbon dioxide equivalent per year (MT CO_2e/yr).[1] Global estimates are based on country inventories developed as part of the programs of the United Nations Framework Convention on Climate Change (UNFCCC).

United States Emissions

In 2014, the United States emitted approximately 6.87 billion MT CO_2e. Total United States emissions have increased by 7.4 percent from 1990 to 2014, and emissions increased from 2013 to 2014 by 1.0 percent. In 2014, relatively cool winter conditions led to an increase in fuels for the residential and commercial sectors for heating. Additionally, transportation emissions increased as a result of a small increase in vehicle miles traveled (VMT) and fuel use across on-road transportation modes. Industrial production also had an increase across multiple sectors, resulting in slight increases in industrial sector emissions. Lastly, since 1990, United States emissions have increased at an average annual rate of 0.3 percent (EPA 2016).

State of California Emissions

According to ARB emission inventory estimates, the State emitted approximately 441.5 million metric tons of CO_2e (MMT CO_2e) emissions in 2014. This is a decrease of 2.8 MMT CO_2e from 2013 and a 9.4 percent decrease since 2004 (ARB 2016b).

The ARB estimates that transportation was the source of approximately 36 percent of the State's GHG emissions in 2014, followed by electricity generation (both in State and out of State) at 20 percent and industrial sources at 21 percent. The remaining sources of GHG emissions were residential and commercial activities at 9 percent, agriculture at 8 percent, high-GWP gases at 4 percent, and recycling and waste at 2 percent (ARB 2016b).

The ARB is responsible for developing the State GHG Emission Inventory. This inventory estimates the amount of GHGs emitted to and removed from the atmosphere by human activities in the State

[1] UNFCCC. GHG data from UNFCCC. Website: http://unfccc.int/ghg_data/ghg_data_unfccc/items/4146.php, accessed December 2017.

and supports the Assembly Bill (AB) 32 Climate Change Program. The ARB's current GHG emission inventory covers the years 1990–2014 and is based on fuel use, equipment activity, industrial processes, and other relevant data (e.g., housing, landfill activity, and agricultural lands).

The ARB staff has projected Statewide unregulated GHG emissions for 2020, which represent the emissions that would be expected to occur in the absence of any GHG reduction actions, at 509 MMT CO_2e. GHG emissions from the transportation and electricity sectors as a whole are expected to increase but remain at approximately 30 percent and 32 percent of total CO_2e emissions, respectively (ARB 2014).

Air Pollution Constituents and Attainment Status

The ARB coordinates and oversees both State and federal air pollution control programs in the State. The ARB oversees activities of local air quality management agencies and maintains air quality monitoring stations throughout the State in conjunction with the EPA and local air districts. The ARB has divided the State into 15 air basins based on meteorological and topographical factors of air pollution. Data collected at these stations are used by the ARB and EPA to classify air basins as attainment, nonattainment, nonattainment-transitional, or unclassified, based on air quality data for the most recent 3 calendar years compared with the AAQS.

Attainment areas may be:

- **Attainment/Unclassified** ("unclassifiable" in some lists), areas which have never violated the air quality standard of interest or do not have enough monitoring data to establish attainment or nonattainment status;

- **Attainment-Maintenance** (national ambient air quality standards [NAAQS] only), areas which violated a NAAQS that is currently in use (was nonattainment) in or after 1990, but now attain the standard and are officially redesignated as attainment areas by the EPA with a maintenance State Implementation Plan (SIP); or

- **Attainment** (usually only for California ambient air quality standards [CAAQS], but sometimes for NAAQS), areas which have adequate monitoring data to show attainment, have never been nonattainment, or, for NAAQS, have completed the official maintenance period.

Nonattainment areas are imposed with additional restrictions as required by the EPA. The air quality data are also used to monitor progress in attaining air quality standards. Table E lists the attainment status for the criteria pollutants in the Basin.

Ozone

O_3 (smog) is formed by photochemical reactions between NO_X and reactive organic gases (ROGs) rather than being directly emitted. O_3 is a pungent, colorless gas typical of Southern California smog. Elevated O_3 concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors (e.g., the sick, the elderly, and young children). O_3 levels peak during summer and early fall. The entire Basin is designated as a

Table E: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
O_3 1-hour	Nonattainment	Extreme Nonattainment
O_3 8-hour	Nonattainment	Extreme Nonattainment
PM_{10}	Nonattainment	Attainment/Maintenance
$PM_{2.5}$	Nonattainment	Serious Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Unclassified/Attainment (1-hour) Attainment/Maintenance (annual)
SO_2	Attainment	Unclassified/Attainment
Lead	Attainment[1]	Nonattainment[1]
All Others	Attainment/Unclassified	Attainment/Unclassified

Sources: South Coast Air Quality Management District. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) Attainment Status for South Coast Air Basin Website: www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf, accessed December 2017.
United States Environmental Protection Agency. Nonattainment Areas for Criteria Pollutants (Green Book). Website: https://www.epa.gov/green-book, accessed December 2017.
[1] The Los Angeles County portion of the Basin only is in Nonattainment.
CO = carbon monoxide
N/A = not applicable
NO_2 = nitrogen dioxide
O_3 = ozone
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
SO_2 = sulfur dioxide

nonattainment area for the State 1-hour and 8-hour O_3 standards. The EPA has officially designated the status for most of the Basin regarding the 8-hour O_3 standard as extreme nonattainment, which means the Basin has until 2024 to attain the federal 8-hour O_3 standard.

Carbon Monoxide

CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless, odorless gas that can cause dizziness, fatigue, and impairments to central nervous system functions. The entire Basin is in attainment for the State CO standards and as an attainment/maintenance area under the federal CO standards.

Nitrogen Oxides

NO_2, a reddish brown gas, and nitric oxide (NO), a colorless, odorless gas, are formed from fuel combustion under high temperature or pressure. These compounds are referred to as nitrogen oxides, or NO_X. NO_X is a primary component of the photochemical smog reaction. It also contributes to other pollution problems, including a high concentration of fine particulate matter ($PM_{2.5}$), poor visibility, and acid deposition (i.e., acid rain). NO_2 decreases lung function and may reduce resistance to infection. The entire Basin is designated as attainment for the State NO_2 standard and as an unclassified/attainment area under the federal 1-hour NO_2 standard.

Sulfur Dioxide

SO_2 is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter ($PM_{2.5}$), and reduces visibility and the level of sunlight. The entire Basin is in attainment with both the federal and State SO_2 standards.

Lead

Lead is found in old paints and coatings, plumbing, and a variety of other materials. Once in the bloodstream, lead can cause damage to the brain, nervous system, and other body systems. Children are highly susceptible to the effects of lead. The portion of the Basin the project site is located in is in nonattainment with both the federal and State lead standards.

Particulate Matter

Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles (PM_{10}) derive from a variety of sources, including windblown dust and grinding operations. Fuel combustion and resultant exhaust from power plants and diesel buses and trucks are primarily responsible for fine particle levels. Fine particles can also be formed in the atmosphere through chemical reactions. PM_{10} can accumulate in the respiratory system and aggravate health problems (e.g., asthma). The EPA's scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to the health effects listed in a number of recently published community epidemiological studies at concentrations that extend well below those allowed by the current PM_{10} standards. These health effects include premature death and increased hospital admissions and emergency room visits (primarily among the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (in children and individuals with cardiopulmonary disease [e.g., asthma]); decreased lung function (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms. The Basin is designated nonattainment for the federal and State $PM_{2.5}$ standards and the State PM_{10} standard, and attainment/maintenance for the federal PM_{10} standard.

Volatile Organic Compounds

Volatile organic compounds (VOCs; also known as ROGs and reactive organic compounds [ROCs]) are formed from the combustion of fuels and the evaporation of organic solvents. VOCs are not defined as criteria pollutants, but are a prime component of the photochemical smog reaction. Consequently, VOCs accumulate in the atmosphere more quickly during the winter when sunlight is limited and photochemical reactions are slower. There are no attainment designations for VOCs.

Sulfates

Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates

takes place comparatively rapidly and completely in urban areas the State due to regional meteorological features. The entire Basin is in attainment for the State standard for sulfates.

Hydrogen Sulfide

H_2S is a colorless gas with the odor of rotten eggs. H_2S is formed during bacterial decomposition of sulfur-containing organic substances. Also, H_2S can be present in sewer gas and some natural gas and can be emitted as the result of geothermal energy exploitation. In 1984, an ARB committee concluded that the ambient standard for H_2S is adequate to protect public health and to significantly reduce odor annoyance. The entire Basin is unclassified for the State standard for H_2S.

Visibility-Reducing Particles

Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials (e.g., metals, soot, soil, dust, and salt). The statewide standard is intended to limit the frequency and severity of visibility impairment due to regional haze. The entire Basin is unclassified for the State standard for visibility-reducing particles.

LOCAL AIR QUALITY

SCAQMD, together with the ARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring station closest to the site is the Riverside-Rubidoux Station located at 5888 Mission Blvd. in Rubidoux approximately 5 miles northeast of project site, which monitors all of the air pollutants. The air quality trends from this station[1, 2] are used to represent the ambient air quality in the project area.

The ambient air quality data in Table F show that NO_2 and CO levels are below the applicable State and federal standards. O_3 and $PM_{2.5}$ levels frequently exceed the applicable State and federal standards. PM_{10} levels frequently exceed the applicable State but not federal standards.

REGULATORY SETTINGS

Federal Regulations/Standards

The Clean Air Act (CAA) is the comprehensive federal law that regulates air emissions from stationary and mobile sources. Among other things, this law authorizes EPA to establish National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare and to regulate emissions of hazardous air pollutants.

1 United States Environmental Protection Agency (EPA). Outdoor Air Quality Data. Website: www.epa.gov/outdoor-air-quality-data/interactive-map-air-quality-monitors, accessed December 2017.

2 California Air Resources Board (ARB). iADAM: Air Quality Data Statistics. Website: www.arb.ca.gov/adam/index.html, accessed December 2017.

Table F: Ambient Air Quality Monitored in the Project Site Vicinity

Pollutant	Standard	2014	2015	2016
Carbon Monoxide (CO)				
Maximum 1-hr concentration (ppm)		2.4	4.1	1.7
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hr concentration (ppm)		1.9	1.7	1.3
Number of days exceeded:	State: ≥ 9.0 ppm	0	0	0
	Federal: ≥ 9 ppm	0	0	0
Ozone (O_3)				
Maximum 1-hr concentration (ppm)		0.141	0.132	0.142
Number of days exceeded:	State: > 0.09 ppm	29	31	33
Maximum 8-hr concentration (ppm)		0.104	0.105	0.104
Number of days exceeded:	State: > 0.070 ppm	66	55	69
	Federal: > 0.070 ppm	66	55	69
Coarse Particulates (PM_{10})				
Maximum 24-hr concentration (µg/m^3)		100.0	69.0	84.0
Number of days exceeded:	State: > 50 µg/m^3	119	87	60
	Federal: > 150 µg/m^3	0	0	0
Annual arithmetic average concentration (µg/m^3)		44.8	40.0	ND
Exceeded for the year:	State: > 20 µg/m^3	Yes	Yes	ND
Fine Particulates ($PM_{2.5}$)				
Maximum 24-hr concentration (µg/m^3)		48.9	54.7	51.5
Number of days exceeded:	Federal: > 35 µg/m^3	5	9	5
Annual arithmetic average concentration (µg/m^3)		16.8	15.4	12.6
Exceeded for the year:	State: > 12 µg/m^3	Yes	Yes	Yes
	Federal: > 15 µg/m^3	Yes	Yes	No
Nitrogen Dioxide (NO_2)				
Maximum 1-hr concentration (ppb)		59.9	57.4	73.1
Number of days exceeded:	State: > 180 ppb	0	0	0
Annual arithmetic average concentration (ppb)		15	14	14
Exceeded for the year:	State: > 30 ppb	No	No	No
	Federal: > 53 ppb	No	No	No

Source 1: United States Environmental Protection Agency (EPA). Air Quality Data. Website: https://www.epa.gov/outdoor-air-quality-data/monitor-values-report, accessed December 2017.
Source 2: California Air Resources Board (ARB). iADAM: Air Quality Data Statistics. Website: http://www.arb.ca.gov/adam, accessed December 2017.

µg/m^3 = micrograms per cubic meter
hr = hour
ND = no data available
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ppm = parts per million
ppb = parts per billion

One of the goals of the Act was to set and achieve NAAQS in every state by 1975 in order to address the public health and welfare risks posed by certain widespread air pollutants. The setting of these pollutant standards was coupled with directing the states to develop state implementation plans (SIPs), applicable to appropriate industrial sources in the state, in order to achieve these standards. The Act was amended in 1977 and 1990 primarily to set new goals (dates) for achieving attainment of NAAQS since many areas of the country had failed to meet the deadlines.

On September 30, 2009, the EPA announced a proposal that focuses on large facilities emitting over 25,000 tons of GHG emissions per year. These facilities would be required to obtain permits that would demonstrate they are using the best practices and technologies to minimize GHG emissions.

On December 7, 2009, the EPA Administrator signed a final action under the CAA, finding that six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to GCC. This EPA action does not impose any requirements on industry or other entities. However, the findings are a prerequisite to finalizing the GHG emission standards for light-duty vehicles mentioned below.

On April 1, 2010, the EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) announced a final joint rule to establish a two phase national program consisting of new standards for light-duty vehicles that will reduce GHG emissions and improve fuel economy. Phase 1 of the program was for year models 2012 through 2016 and Phase 2 was for year models 2017 through 2025. The EPA has finalized the first-ever national GHG emissions standards under the CAA, and NHTSA has finalized Corporate Average Fuel Economy standards under the Energy Policy and Conservation Act. With the standards of the two phases together, the EPA GHG standards require these vehicles to meet an estimated combined average emissions level of 163 grams of CO_2 per mile in model year 2025, equivalent to 54.5 miles per gallon.

State Regulations/Standards

In 1967, the State Legislature passed the Mulford-Carrell Act, which combined two Department of Health bureaus (i.e., the Bureau of Air Sanitation and the Motor Vehicle Pollution Control Board), to establish the ARB. Since its formation, the ARB has worked with the public, the business sector, and local governments to find solutions to the State's air pollution problems.

California adopted the CCAA in 1988. The ARB administers the CAAQS for the 10 air pollutants designated in the CCAA. These 10 State air pollutants are the six criteria pollutants designated by the federal CAA as well as four others: visibility-reducing particulates, H_2S, sulfates, and vinyl chloride.

California Climate Action Milestones

In 1988, AB 4420 directed the California Energy Commission (CEC) to report on "how global warming trends may affect the State's energy supply and demand, economy, environment, agriculture, and water supplies" and offer "recommendations for avoiding, reducing and addressing the impacts." This marked the first statutory direction to a State agency to address climate change.

The California Climate Action Registry was created to encourage voluntary reporting and early reductions of GHG emissions with the adoption of Senate Bill (SB) 1771 in 2000. The CEC was directed to assist by developing metrics and identifying and qualifying third-party organizations to provide technical assistance and advice to GHG emission reporters. The next year, SB 527 amended SB 1771 to emphasize third-party verification.

SB 1771 also contained several additional requirements for the CEC, including (1) updating the State's GHG inventory from an existing 1998 report and continuing to update it every 5 years; (2) acquiring, developing, and distributing information on GCC to agencies and businesses; (3) establishing a State interagency task force to ensure policy coordination; and (4) establishing a

climate change advisory committee to make recommendations on the most equitable and efficient ways to implement GCC requirements. In 2006, AB 1803 transferred preparation of the inventory from the CEC to the ARB by AB 1803. The ARB updates the inventory annually.

AB 1493, authored by Assembly Member Fran Pavley in 2002, directed the ARB to adopt regulations to achieve the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles. The so-called "Pavley" regulations, or Clean Car regulations, were approved by the ARB in 2004. On September 24, 2009, the ARB adopted amendments to the "Pavley" regulations that reduced GHG emissions in new passenger vehicles from 2009 through 2016. AB 1493 also directed the State's Climate Action Registry to adopt protocols for reporting reductions in GHG emissions from mobile sources prior to the operative date of the regulations.The California Renewable Portfolio Standard Program, which requires electric utilities and other entities under the jurisdiction of the California Public Utilities Commission to meet 20 percent of their retail sales with renewable power by 2017, was established by SB 1078 in 2002. The Renewable Portfolio Standard was accelerated to 20 percent by 2010 by SB 107 in 2006. The program was subsequently expanded by the renewable electricity standard approved by the ARB in September 2010, requiring all utilities to meet a 33 percent target by 2020. The renewable electricity standard is projected to reduce GHG emissions from the electricity sector by at least 12 MMT CO_2e in 2020.

In December 2004, Governor Arnold Schwarzenegger signed Executive Order (EO) S-20-04, which set a goal of reducing energy use in State-owned buildings by 20 percent by 2015 (from a 2003 baseline) and encouraged cities, counties, schools, and the private sector to take all cost-effective measures to reduce building electricity use. This action built upon the State's strong history of energy-efficiency efforts that have saved Californians and State businesses energy and money for decades. They are a cornerstone of GHG reduction efforts.

EO S-3-05 (June 2005) established GHG targets for the State (e.g., returning to year 2000 emission levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050). EO S-3-05 directed the Secretary of the California Environmental Protection Agency to coordinate efforts to meet the targets with the heads of other State agencies. This group became the Climate Action Team.

In 2006, the State Legislature passed the California Global Warming Solutions Act of 2006 (AB 32), which created a comprehensive, multiyear program to reduce GHG emissions in California. AB 32 required the ARB to develop a Scoping Plan that describes the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by the ARB in 2008 and must be updated every 5 years. The First Update to the Climate Change Scoping Plan was approved by the ARB on May 22, 2014. In 2016, the State Legislature passed SB 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. With SB 32, the State Legislature passed companion legislation AB 197, which provides additional direction for developing the Scoping Plan. The ARB is moving forward with a second update to the Scoping Plan to reflect the 2030 target set by EO B-30-15 and codified by SB 32.

California is implementing the world's first Low Carbon Fuel Standard for transportation fuels, pursuant to both EO S-01-07 (signed January 2007) and AB 32. The standard requires a reduction of at least 10 percent in the CO intensity of the State's transportation fuels by 2020. This reduction is

expected to reduce GHG emissions in 2020 by 17.6 MMT CO2e. Also in 2007, AB 118 created the Alternative and Renewable Fuel and Vehicle Technology Program. The CEC and the ARB administer the program. This act provides funding for alternative fuel and vehicle technology research, development, and deployment in order to attain the State's climate change goals, achieve the State's petroleum reduction objectives and clean air and GHG emission reduction standards, develop public-private partnerships, and ensure a secure and reliable fuel supply.

In addition to vehicle emissions regulations and the Low Carbon Fuel Standard, the third effort to reduce GHG emissions from transportation is the reduction in the demand for personal vehicle travel (i.e., VMT). This measure was addressed in September 2008 through the Sustainable Communities and Climate Protection Act of 2008, or SB 375. The enactment of SB 375 initiated an important new regional land use planning process to mitigate GHG emissions by integrating and aligning planning for housing, land use, and transportation for California's 18 MPOs. The bill directed the ARB to set regional GHG emission reduction targets for most areas of the State. SB 375 also contained important elements related to federally mandated regional transportation plans and the alignment of State transportation and housing planning processes.

Also codified in 2008, SB 97 required the Governor's Office of Planning and Research (OPR) to develop GHG emissions criteria for use in determining project impacts under CEQA. These criteria were developed in 2009 and went into effect in 2010.

The initiatives, EOs, and statutes outlined above comprise the major milestones in California's efforts to address climate change through coordinated action on climate research, GHG mitigation, and climate change adaptation. Numerous other related efforts have been undertaken by State agencies and departments to address specific questions and programmatic needs. The Climate Action Team coordinates these efforts and others, which comprise the State's climate program. The sections below describe these efforts.

Regional Air Quality Planning Framework

The 1976 Lewis Air Quality Management Act established SCAQMD and other air districts throughout the State. The federal CAA Amendments of 1977 required that each state adopt an implementation plan outlining pollution control measures to attain the federal standards in nonattainment areas of the state.

The ARB is responsible for incorporating air quality management plans (AQMPs) for local air basins into an SIP for EPA approval. Significant authority for air quality control within them has been given to local air districts that regulate stationary-source emissions and develop local nonattainment plans.

Regional Air Quality Management Plan

SCAQMD and SCAG are responsible for formulating and implementing the AQMP for the Basin. The main purpose of an AQMP is to bring the area into compliance with federal and State air quality standards. Every 3 years, SCAQMD prepares a new AQMP, updating the previous plan and 20-year horizon. SCAQMD approved the 2016 AQMP (SCAQMD 2016) on March 3, 2017 and submitted the plan to the ARB on March 10, 2017. Key elements of the 2016 AQMP include:

- Calculating and taking credit for co-benefits from other planning efforts (e.g., climate, energy, and transportation)
- A strategy with fair-share emission reductions at the federal, State, and local levels
- Investment in strategies and technologies meeting multiple air quality objectives
- Seeking new partnerships and significant funding for incentives to accelerate deployment of zero and near-zero technologies
- Enhanced socioeconomic assessment, including an expanded environmental justice analysis
- Attainment of the 24-hour PM_{25} standard in 2019 with no additional measures
- Attainment the annual PM_{25} standard by 2025 with implementation of a portion of the ozone strategy
- Attainment of the 1-hour ozone standard by 2022 with no reliance on "black box" future technology (CAA Section 182(e)(5) measures)

County of Riverside Climate Action Plan

The County of Riverside Climate Action Plan (CAP) was adopted on December 8, 2015. The CAP establishes goals and policies that incorporate environmental responsibility into County of Riverside's (County) daily management of residential, commercial and industrial growth, education, energy and water use, air quality, transportation, waste reduction, economic development, open space and natural habitats to further their commitment. Following the state's adopted AB 32 GHG reduction target, the County has set a goal to reduce emissions back to 1990 levels by the year 2020. The CAP describes a baseline for the County's GHG emissions, projects how these emissions will grow, and includes strategies to reduce emissions to a level consistent with California's emissions reduction target. These strategies complement the County's General Plan policies and are consistent with the vision of the County for a more sustainable community.

City of Riverside General Plan

The City of Riverside General Plan 2025 (City) adopted by the City in November 2007, is designed to guide City Council members make land use decisions and shape priorities to allow the City to grow according to the vision of the plan. The Plan helps City departments achieve the objectives and policies of the General Plan, and serve as development guidance for projects within the City. The air quality element identifies the role the City can play in helping the south coast air basin attain the goal of meeting federal and state air quality standards, as well as the function the City has in protecting the residents and businesses from the harmful air contaminants. To achieve these goals, the air quality element has set forth a number of provisions and programs to reduce current air pollutant emissions, while requiring new development to include measures to comply with air quality requirements and to address new stringent air quality standards. The air quality strategies listed in the air quality element include:

- Adopt land use policies that site polluting facilities away from sensitive receptors and vice versa; improve job-housing balance; reduce vehicle miles traveled and length of work trips; and improve the flow of traffic.
- Reduce air pollution by reducing emissions from mobile sources. Investment in strategies and technologies meeting multiple air quality objectives

- Prevent and reduce pollution from stationary sources, including point sources (such as power plants and refinery boilers) and area sources (including small emission sources such as residential water heaters and architectural coatings).
- Reduce particulate matter, as defined by the Environmental Protection Agency (EPA), as either airborne photochemical precipitates air pollution.
- Increase energy efficiency and conservation in an effort to reduce air pollution.
- Develop a public education program committed to educating the general public on the issues of air pollution and mitigation measures that can be undertaken by businesses and residents to improve air quality.
- Support a regional approach to improving air quality through multi-jurisdictional cooperation.

Riverside Restorative Growth print - Economic Prosperity Action Plan (RRG-EPAP) and Climate Action Plan (RRG-CAP)

The RRG-EPAP and the RRG-CAP were adopted by the City on January 5, 2016. In 2014, Riverside was one of twelve cities that collaborated with the Western Riverside Council of Governments (WRCOG) on a Sub regional Climate Action Plan (Sub regional CAP) that includes 36 measures to guide Riverside's GHG reduction efforts through 2020. The RRG-CAP expands upon the Sub regional climate action plan and provides a path for the City to achieve deep reductions in GHG emissions through 2035, while the RRG-EPAP provides a framework for smart growth and low-carbon economic development. By using energy more efficiently, harnessing renewable energy to power buildings and vehicles, improving access to sustainable transportation modes, recycling more waste, conserving water, and building local food systems, the City can support the local economy, create new green jobs, and improve public health and community quality of life. The RRG-CAP contains GHG reduction measures organized into four primary sectors, as defined by the following policy goals:

- Energy
  - Energy Measures designed to increase community-wide building and equipment efficiency and renewable energy use, and promote energy efficiency and renewable energy generation for use supporting municipal operations that support the community.
- Transportation and Land Use
  - Transportation and land use measures that would reduce single-occupancy vehicle travel, increase non-motorized travel, improve public transit access, increase motor vehicle efficiency, encourage alternative fuel vehicles and promote sustainable growth patterns.
- Water
  - Water measures that would conserve potable water and reduce water demand by the community and municipal operations.
- Solid Waste
  - Solid waste measures that would reduce solid waste sent to landfills that is generated by the community and municipal operations.

THRESHOLDS OF SIGNIFICANCE

Certain air districts (e.g., SCAQMD) have created guidelines and requirements to conduct air quality analyses. SCAQMD's current guidelines, the *CEQA Air Quality Handbook* (SCAQMD 1993) with associated updates, and the City guidelines were adhered to in the assessment of air quality impacts for the proposed project.

This air quality impact analysis includes emissions associated with short-term construction and long-term operation of the proposed project estimated using the current air quality model, CalEEMod Version 2016.3.2. Criteria pollutants with regional impacts would be emitted by project-related vehicular trips, as well as by emissions associated with stationary sources used on site.

The net increase in pollutant emissions determines the significance and impact on regional air quality as a result of the proposed project. The results also allow the local government to determine whether the proposed project will deter the region from achieving the goal of reducing pollutants in accordance with the AQMP in order to comply with the NAAQS and CAAQS.

Based on Guidelines for the Implementation of CEQA, Appendix G, Public Resources Code Sections 15000–15387, a project would normally be considered to have a significant effect on air quality if the project would violate any State AAQS, contribute substantially to an existing air quality violation, expose sensitive receptors to substantial pollutants concentrations, or conflict with adopted environmental plans and goals of the community in which it is located.

POLLUTANTS WITH REGIONAL EFFECTS

SCAQMD has established daily emissions thresholds for construction and operation of a proposed project in the Basin. The emissions thresholds were established based on the attainment status of the Basin with regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety (EPA), these emissions thresholds are regarded as conservative and would overstate an individual project's contribution to health risks.

Regional Thresholds for Construction Emissions

The following CEQA significance thresholds for construction emissions have been established for the Basin:

- 75 pounds per day (lbs/day) of VOC
- 100 lbs/day of NO_X
- 550 lbs/day of CO
- 150 lbs/day of PM_{10}
- 55 lbs/day of $PM_{2.5}$
- 150 lbs/day of sulfur oxides (SO_X)

Projects in the Basin with construction-related emissions that exceed any of these emission thresholds are considered to be significant under SCAQMD guidelines.

Regional Thresholds for Operational Emissions

The following CEQA significance thresholds for operational emissions have been established for the Basin:

- 55 lbs/day of VOCs
- 55 lbs/day of NO_X
- 550 lbs/day of CO
- 150 lbs/day of PM_{10}
- 55 lbs/day of $PM_{2.5}$
- 150 lbs/day of SO_X

Projects in the Basin with operational emissions that exceed any of these emission thresholds are considered to be significant under SCAQMD guidelines.

The phase-out of leaded gasoline started in 1976. Since gasoline no longer contains lead, the project is not anticipated to result in air quality impacts related to lead; therefore, no further discussion is provided in this analysis.

Local Microscale Concentration Standards

The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below State and federal CO standards. Because ambient CO levels are below the standards in the entire Basin, a project would be considered to have a significant CO impact if project emissions result in an exceedance of one or more of the 1-hour or 8-hour standards. The following are applicable local emission concentration standards for CO:

- California State 1-hour CO standard of 20.0 ppm
- California State 8-hour CO standard of 9.0 ppm

Thresholds for Localized Impacts Analysis

SCAQMD published its *Final Localized Significance Threshold Methodology* in June 2003 and updated it in July 2008 (SCAQMD 2003), recommending that all air quality analyses include an assessment of both construction and operational impacts on the air quality of nearby sensitive receptors. Localized significance thresholds (LSTs) represent the maximum emissions from a project site of up to 5 acres that are not expected to result in an exceedance of the NAAQS or CAAQS, as shown in Table B. LSTs are based on the ambient concentrations of that pollutant within the project Source Receptor Area (SRA) and the distance to the nearest sensitive receptor. For this project, the appropriate SRA for the LST analysis is the Metropolitan Riverside County area (SRA 23).

In the case of CO and NO_2, if ambient levels are below the NAAQS and CAAQS a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a State or federal standard, then project emissions are considered significant if they increase ambient concentrations by a measurable amount. This would apply to PM_{10} and $PM_{2.5}$, both of which are nonattainment pollutants (SCAQMD 2006). For these two, the significance criteria are the pollutant concentration thresholds presented in SCAQMD Rules

403 and 1301. The Rule 403 threshold of 10.4 µg/m^3 applies to construction emissions. The Rule 1301 threshold of 2.5 µg/m^3 applies to operational activities.

Even if the total project site area is greater than 5 acres, if the total daily acreage disturbed is less than or equal to five acres per day, then the SCAQMD's screening look-up tables can be utilized to determine if a project has the potential to result in a significant construction impact. Based on the SCAQMD recommended methodology[1] and the construction equipment planned, no more than 4 acres[2] would be disturbed on any one day, thus the 2 and 5 acre thresholds have been interpolated to derive 4 acre LST thresholds for construction emissions. For operational emissions, the localized significance for a project greater than 5 acres can be determined by performing the screening-level analysis before using the dispersion modeling because the screening-level analysis is more conservative, and if no exceedance of the screening-level thresholds is identified then the chance of operational LSTs exceeding concentration standards is small.

The nearest sensitive receptors to the project site are existing on-campus student housing and academic facilities on the project site itself, as well as existing single-family and multi-family residences located adjacent to the properties within the CBUSP Planning Area (i.e., CBUSP-1 and CBUSP-2 subareas), some of which are between 10 and 25 feet from select CBU properties (e.g., River Springs Charter School and Engineering Building, respectively). SCAQMD LST Methodology (SCAQMD 2003) specifies "Projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters." Therefore, the following emissions thresholds apply during project construction and operation:

- **Construction LSTs, 4-acre, 82-foot (25-meter) distance**
    - 237 lbs/day of NO_X
    - 1,346 lbs/day of CO
    - 11 lbs/day of PM_{10}
    - 7 lbs/day of $PM_{2.5}$
- **Operation LSTs, 5-acre, 82-foot (25-meter) distance**
    - 270 lbs/day of NOX
    - 1,577 lbs/day of CO
    - 4.0 lbs/day of PM_{10}
    - 2.0 lbs/day of $PM_{2.5}$

GLOBAL CLIMATE CHANGE

State CEQA Guidelines Section 15064(b) provides that the "determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public

1 SCAQMD. *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds*. Website: www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf, accessed December 2017.

2 A maximum disturbance of 4 acre would occur during the grading phase from the possible use of two excavators, one grader, one dozer and two scrapers for 8 hours on a peak activity day.

agency involved, based to the extent possible on scientific and factual data," and further states that an "ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

A project would normally have a significant effect on the environment if it would:

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

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

Currently, there is no Statewide GHG emissions threshold that has been used to determine potential GHG emissions impacts of a project. Threshold methodology and thresholds are still being developed and revised by air districts in the State. Therefore this environmental issue remains unsettled and must be evaluated on a case-by-case basis until such time as SCAQMD adopts significance thresholds and GHG emissions impact methodology. In the absence of a climate action plan for the City, SCAQMD thresholds, when adopted, would apply to future development in the City.

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD convened a GHG CEQA Significance Threshold Stakeholder Working Group (Working Group).[1] Based on the last Working Group meeting (Meeting No. 15) held in September 2010, SCAQMD proposed an analysis methodology using a tiered approach for the evaluation of GHG emissions for development projects where SCAQMD is not the lead agency (SCAQMD 2010). The applicable tier for this educational development project is Tier 3 (if GHG emissions are less than 3,000 MT CO_2e/yr, project-level and cumulative GHG emissions are less than significant).

[1] South Coast Air Quality Management District. Greenhouse Gases (GHG) CEQA Significance Thresholds. Website: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ghg-significance-thresholds/, accessed December 2017.

IMPACTS AND MITIGATION

Air pollutant emissions associated with the project would occur over the short term from construction activities and the long-term from project-related vehicular trips and due to energy consumption (e.g., natural gas usage) by the proposed land uses.

CONSTRUCTION IMPACTS

Equipment Exhaust Emissions

Construction activities produce combustion emissions from various sources (e.g., site preparation, grading, utility engines, and motor vehicles transporting the construction crew). Exhaust emissions from construction activities envisioned on site would vary daily as construction activity levels change. The use of construction equipment on site would result in localized exhaust emissions.

In order to characterize these future construction activities, the most recent version of the California Emission Estimator Model (CalEEMod, Version 2016.3.2) was used to calculate the potential peak daily construction emissions based on a standard construction equipment set and typical construction activities. Table G lists the potential construction equipment to be used during specific development project construction under each construction phase (the default equipment list from the CalEEMod modeling). The construction emissions are shown in Table H. The emissions rates shown in the table are from the CalEEMod output tables listed as "Mitigated Construction," although the only measures that have been applied to the analysis are the construction emissions control measures, or standard conditions, required by SCAQMD. The emissions are the combination of the on- and off-site emissions.

Table G: Diesel Construction Equipment Utilized by Construction Phase

Construction Phase	Off-Road Equipment Type	Off-Road Equipment Unit Amount	Hours Used per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	1	8	81	0.73
	Excavators	3	8	158	0.38
	Rubber Tired Dozers	2	8	247	0.4
Site Preparation	Rubber Tired Dozers	3	8	247	0.4
	Tractors/Loaders/Backhoes	4	8	97	0.37
Grading	Excavators	2	8	158	0.38
	Graders	1	8	187	0.41
	Rubber Tired Dozers	1	8	247	0.4
	Scrapers	2	8	367	0.48
	Tractors/Loaders/Backhoes	2	8	97	0.37
Building Construction	Cranes	1	7	231	0.29
	Forklifts	3	8	89	0.2
	Generator Sets	1	8	84	0.74
	Tractors/Loaders/Backhoes	3	7	97	0.37
	Welders	1	8	46	0.45
Paving	Pavers	2	8	130	0.42
	Paving Equipment	2	8	132	0.36
	Rollers	2	8	80	0.38
Architectural Coating	Air Compressors	1	6	78	0.48

Source: Compiled by LSA using CalEEMod defaults (December 2017).
CalEEMod = California Emission Estimator Model

Table H: Short-Term Regional Construction Emissions

	Total Regional Pollutant Emissions (lbs/day)							
Construction Phase	VOC	NO_X	CO	SO_X	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Demolition	4	38	23	0	1	2	0	2
Site Preparation	4	46	23	0	8	2	5	2
Grading	5	55	34	0	4	2	2	2
Building Construction	22	94	170	1	39	2	10	2
Paving	1	11	15	0	0	1	0	1
Architectural Coating	44	3	23	0	7	0	2	0
Peak Daily	**44**	**94**	**170**	**1**	**41**		**12**	
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**		**55**	
Significant Emissions?	**No**	**No**	**No**	**No**	**No**		**No**	

Source: Compiled by LSA (December 2017).
Note: These estimates reflect control of fugitive dust required by SCAQMD Rule 403.
The values shown are the maximum summer or winter daily emissions results from CalEEMod.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compounds

Fugitive Dust

Fugitive dust emissions are generally associated with land clearing and exposure of soils to the air and wind, as well as cut-and-fill grading operations. Dust generated during construction varies substantially on a project-by-project basis, depending on the level of activity, the specific operations, and weather conditions at the time of construction. All specific development projects will be required to comply with SCAQMD Rules 402 and 403 to control fugitive dust.

Table H lists total construction emissions (i.e., fugitive-dust emissions and construction-equipment exhausts) that have incorporated a number of feasible control measures that can be reasonably implemented to significantly reduce PM_{10} emissions from construction.

Architectural Coatings

Architectural coatings contain VOCs that are an O_3 emissions precursor. It is estimated that application of architectural coatings during the proposed peak construction day would result in peak emissions of 35.4 lbs/day of VOC. Therefore, VOC emissions from architectural coating application would not exceed the SCAQMD VOC threshold of 75 lbs/day.

Localized Impacts Analysis

SCAQMD has issued guidance on applying CalEEMod results to localized impacts analyses.[1] Based on the localized impact analysis results as shown in Table I, the construction emissions would not exceed the LSTs for impacts to the existing sensitive receptors adjacent to the construction sites.

Table I: Construction Localized Impacts Analysis

Emissions Sources	Onsite Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Construction Equipment	55	33	11	7
LST Thresholds	**237**	**1,346**	**11**	**7**
Significant Emissions?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (December 2017).
Note: Source Receptor Area – Metropolitan Riverside County area, 4-acre, 82-foot distance.
CO = carbon monoxide
lbs/day = pounds per day
LST = localized significance threshold
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

Odors

Heavy-duty equipment used during construction would emit odors, primarily from the equipment exhaust. However, the construction activity would cease to occur after individual construction is completed. No other sources of objectionable odors have been identified for the CBUSP, and no mitigation measures would be required.

[1] SCAQMD. *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds*. Website: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf, accessed December 2017.

SCAQMD Rule 402 regarding nuisances states: "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property." The proposed CBUSP does not include any sources that are anticipated to emit any objectionable odors. Therefore, objectionable odors posing a health risk to potential on-site and existing off-site uses would not occur as a result of the CBUSP.

Naturally Occurring Asbestos

The CBUSP is located in Riverside County, which has been found to have serpentine and ultramafic rock in its soil. However, no such rock has been identified in the project vicinity in the past 25 years. Therefore, the potential risk for naturally occurring asbestos (NOA) during project construction is small and less than significant.

Construction Emissions Conclusions

Tables H and I show that daily regional construction emissions would not exceed the daily thresholds of any criteria pollutant emission thresholds established by SCAQMD. Thus, during construction, there will be no regional or locally significant impacts.

Standard measures required by the SCAQMD to minimize fugitive dust emissions are discussed later in this report. Details of the emission factors and other assumptions are included in the CalEEMod output in Appendix A.

LONG-TERM REGIONAL AIR QUALITY IMPACTS

Long-Term Project Operational Emissions

Long-term air pollutant emission impacts are those associated with stationary sources and mobile sources involving any project-related changes. The proposed project would result in a net increase of stationary area- and energy-sources emissions, in addition to mobile-source emissions. The stationary source emissions would come from many sources, including the use of consumer products, landscape equipment, general energy use, and solid waste disposal. Trip generation rates from the *California Baptist University Traffic Impact Analysis* (Rick Engineering, December 2016) combined with fleet mixes appropriate to a university and CalEEMod default trip lengths have been used to develop the mobile source emissions. The TIA estimated that at buildout, the project would generate an additional [#] trips per day.

Long-term operational emissions associated with the proposed project are shown in Tables J and K (localized significance impacts). Table J shows that the peak daily emissions of all criteria pollutants as a result of the proposed project would not exceed the corresponding SCAQMD daily emission thresholds. Therefore, project-related long-term air quality impacts would be less than significant.

Table J: Opening Year Regional Operational Emissions

Source	Pollutant Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area Sources	19	4	328	<1	2	2
Energy Sources	2	16	7	<1	1	1
Mobile Sources	17	23	154	<1	34	9
Total Project Emissions	**38**	**42**	**488**	**0**	**37**	**12**
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Significant?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA (December 2017).
Note: Results rounded to two significant digits.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compounds

Localized Impacts Analysis

Table K shows the calculated emissions for the proposed operational activities compared with the appropriate LSTs. By design, the localized impacts analysis only includes on-site sources; however, the CalEEMod outputs for operations do not separate on-site and off-site emissions. The emissions shown in Table J for area sources are assumed to all occur on-site, while energy sources would occur entirely off site. While some of the mobile-source emissions would occur from vehicles driving on site, most of the mobile-source emissions calculated by the CalEEMod would occur while the vehicles are driving off site.

Table K: Long-Term Operational Localized Impact Analysis (lbs/day)

Emissions Sources	NO_X	CO	PM_{10}	$PM_{2.5}$
On-site Emissions	5	335	4	2
LSTs	**270**	**1,577**	**4**	**2**
Significant Emissions?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (December 2017).
Note: Source Receptor Area – Metropolitan Riverside County area, 5-acre, 82-foot distance, on-site traffic 5 percent of total.
CO = carbon monoxide
lbs/day = pounds per day
LST = localized significance thresholds
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

The average on-site distance driven by vehicles is unlikely to be more than 1/3 of a mile, which is approximately 4 percent of the total miles traveled. For a worst-case scenario assessment, the emissions shown in Table K include all on-site project-related area sources and 5 percent of the project-related new mobile sources. Table K shows that the operational emissions would not exceed the LSTs. Therefore, the proposed operational activity would not result in criteria pollutant concentrations above either the CAAQS or NAAQS and are, thus, less than significant.

Greenhouse Gas Emissions

This section evaluates potential significant impacts to GCC that could result from implementation of the proposed CBUSP. Because it is not possible to tie specific GHG emissions to actual changes in climate, this evaluation focuses on the project's emission of GHGs. Mitigation measures are identified as appropriate.

GHG Emissions Background

Emissions estimates for the proposed CBUSP are discussed below. GHG emissions estimates are provided herein for informational purposes only, as there is no established quantified GHG emissions threshold. Bearing in mind that CEQA does not require "perfection" but instead "adequacy, completeness, and a good faith effort at full disclosure," the analysis below is based on methodologies and information available to the City and the applicant at the time this analysis was prepared. Estimation of GHG emissions in the future does not account for all changes in technology that may reduce such emissions; therefore, the estimates are based on past performance and represent a scenario that is worse than that which is likely to be encountered (after energy-efficient technologies have been implemented). While information is presented below to assist the public and decision-makers in understanding the project's potential contribution to GCC impacts, the information available to the cities is not sufficiently detailed to allow a direct comparison between particular project characteristics and particular climate change impacts, or between any particular proposed mitigation measure and any reduction in climate change impacts.

Construction and operation of the proposed CBUSP would generate GHG emissions, with the majority of energy consumption (and associated generation of GHG emissions) occurring during the CBUSP's operation (as opposed to during its construction). Typically, more than 80 percent of the total energy consumption takes place during the use of buildings and less than 20 percent of energy is consumed during construction (United Nations Environment Programme 2007). Overall, the following activities associated with the proposed project could directly or indirectly contribute to the generation of GHG emissions:

- **Construction Activities:** During construction of the project, GHGs would be emitted through the operation of construction equipment and from worker and vendor vehicles, each of which typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs (e.g., CO_2, CH_4, and N_2O). Furthermore, CH_4 is emitted during the fueling of heavy equipment.

- **Gas, Electricity, and Water Use:** Natural gas use results in the emission of two GHGs: CH_4 (the major component of natural gas) and CO_2 (from the combustion of natural gas). Electricity use can result in GHG production if the electricity is generated by combusting fossil fuel. California's water conveyance system is energy-intensive. Preliminary estimates indicate that the total energy used to pump and treat this water exceeds 6.5 percent of the total electricity used in the State per year (State of California 2008).

- **Solid Waste Disposal:** Solid waste generated by the project could contribute to GHG emissions in a variety of ways. Landfilling and other methods of disposal use energy for transporting and managing the waste, and they produce additional GHGs to varying degrees. Landfilling, the most common waste management practice, results in the release of CH_4 from the anaerobic

decomposition of organic materials. CH_4 is 25 times more potent a GHG than CO_2. However, landfill CH_4 can also be a source of energy. In addition, many materials in landfills do not decompose fully, and the carbon that remains is sequestered in the landfill and not released into the atmosphere.

- **Motor Vehicle Use:** Transportation associated with the proposed CBUSP would result in GHG emissions from the combustion of fossil fuels in daily automobile and truck trips.

Table L lists the annual CO_2e emissions for each of the planned construction phases based on the results from CalEEMod.

Architectural coatings used in project construction may contain VOCs that are similar to ROGs and are part of O_3 precursors. However, there are no significant emissions of GHGs from architectural coatings. The architectural coating phase in Table L shows GHG emissions from equipment exhaust and energy use.

Table L: Construction Greenhouse Gas Emissions

Construction Phase		Total Regional Pollutant Emissions (MT/yr)			
		CO_2	CH_4	N_2O	CO_2e
2019	Demolition	107	<1	0	107
	Site Preparation	54	<1	0	54
	Grading	216	<1	0	218
	Building Construction	2,440	<1	0	2,443
2020	Building Construction	5,889	<1	0	5,896
2021	Building Construction	5,725	<1	0	5,733
2022	Building Construction	2,371	<1	0	2,374
	Paving	59	<1	0	59
	Architectural Coating	156	<1	0	156
Total Construction Emissions		**17,017**	**<1**	**0**	**17,041**
Amortized over 30 years		**567**	**<1**	**0**	**568**

Source: Compiled by LSA (December 2017).
Note: While the CH_4 and N_2O emissions are shown as zero, some are actually just less than 1. However, they do contribute to the CO_2e total.
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
MT/yr = metric tons per year
N_2O = nitrous oxide

Long-term operation of the proposed project would generate GHG emissions from area and mobile sources and indirect emissions from stationary sources associated with energy consumption. Mobile-source emissions of GHGs would include project-generated vehicle trips associated with on-site energy use and residential vehicle trips. Area-source emissions would be associated with activities including landscaping and maintenance of the proposed project, natural gas for heating, and other sources. Increases in stationary-source emissions would also occur at off-site utility providers as a result of demand for electricity, natural gas, and water by the proposed project.

The GHG emission estimates presented in Table M shows the emissions associated with the level of development envisioned by the proposed project at opening. Appendix A includes the worksheets

for the GHG emissions. Area sources include architectural coatings, consumer products, hearth, and landscaping. Energy sources include natural gas consumption for heating and cooking.

As shown in Table M, the project will result in GHG emissions of 25,999 MT CO_2e/yr, which is 0.026 MMT CO_2e per year (MMT CO_2e/yr). For comparison, the existing emissions from the entire SCAG region are estimated to be approximately 176.79 MMT CO_2e/yr, and the existing emissions for the entire State are estimated at approximately 448 MMT CO_2e/yr.

Table M: Operational Greenhouse Gas Emissions

Source	Pollutant Emissions, MT/year					
	Bio- CO_2	NBio- CO_2	Total CO_2	CH_4	N_2O	CO_2e
Construction emissions amortized over 30 years	0	567	567	<1	0	568
Operational Emissions						
Area Sources	0	67	67	<1	0	68
Energy Sources	0	15,691	15,691	<1	<1	15,734
Mobile Sources	0	4,708	4,708	<1	0	4,717
Waste Sources	517	0	517	31	0	1,280
Water Usage	85	3,263	3,347	9	<1	3,632
Total Project Emissions	**601**	**24,296**	**24,897**	**39**	**0**	**25,999**
					SCAQMD Threshold	**3,000**
					Significant?	**Yes**

Source: Compiled by LSA (December 2017).
Note: While the CH_4 and N_2O emissions are shown as zero, some are actually just less than 1. However, they do contribute to the CO_2e total.
Bio-CO_2 = biologically generated CO_2
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
MT/yr = metric tons per year
N_2O = nitrous oxide
NBio-CO_2 = Non-biologically generated CO_2

Energy/Natural Gas Use

Buildings represent 39 percent of the United States' primary energy usage and 70 percent of its electricity consumption (United States Department of Energy 2012). The proposed project would increase the demand for electricity and natural gas due to the increased building area and number of residents. The project would indirectly result in GHG emissions from off-site electricity generation at power plants and on-site natural gas consumption (15,734 MT CO_2e/yr.

Area Sources

Area sources of GHG emissions include consumer products and landscaping. The project would result in 68 MT CO_2e/yr from area sources.

Water Use

Water-related energy use consumes 19 percent of California's electricity every year (CEC 2005). Energy use and related GHG emissions are based on electricity used for water supply and conveyance, water treatment, water distribution, and wastewater treatment. The project would

indirectly result in increased GHG emissions from the off-site electricity generation at power plants and on-site natural gas consumption (3,632 MT CO_2e/yr).

Solid Waste Disposal

The proposed project would also generate solid waste during the operation phase of the project. Average waste generation rates from a variety of sources are available from the California Department of Resources Recycling and Recovery (CalRecycle).[1] The project would indirectly result in GHG emissions from solid waste treatment at treatment plants (1,280 MT CO_2e/yr).

Mobile Sources

Mobile sources (vehicle trips and associated VMT) are the largest source of GHG emissions in California and represent approximately 38 percent of annual CO_2 emissions generated in the State. The project would directly result in GHG emissions from mobile sources (4,717 MT CO_2e/yr). Emissions from vehicle exhaust are controlled by the State and federal governments and are outside the control of the City or University.

The nonmobile source GHG emissions are primarily associated with building heating systems and increased regional power plant electricity generation due to the project's electrical demands. Specific development projects proposed under the project would comply with existing State and federal regulations regarding the energy efficiency of buildings, appliances, and lighting, which would reduce the project's electricity demand. The new buildings constructed in accordance with current energy efficiency standards would be more energy-efficient than older buildings. All structures other than one- and two-family dwellings and townhomes will be built under the 2016 California Building Code to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts that have a positive environmental impact and encourage sustainable construction practices.

At present, there is a federal ban on chlorofluorocarbons (CFCs); therefore, it is assumed the project would not generate emissions of CFCs. The project may emit a small amount of HFCs from leakage and service of refrigeration and air-conditioning equipment and from disposal at the end of the life of the equipment. However, the details regarding refrigerants to be used at the project site are unknown at this time. PFCs and SF_6 are typically used in industrial applications, neither of which would be used on the project site. Therefore, the project is not anticipated to contribute significant emissions of these additional GHGs.

Because climate change impacts are cumulative in nature, no typical single project can result in emissions of such a magnitude that it, in and of itself, would be significant on a project basis. The project's operational emissions of 25,999 MT CO_2e/yr is greater than the SCAQMD-recommended interim threshold of 3,000 MT CO_2e/yr. Therefore, the proposed project would potentially result in a significant impact for GHG emissions and mitigation would be required.

[1] California Department of Resources Recycling and Recovery. Residential Developments: Estimated Solid Waste Generation Rates. Website: http://www.calrecycle.ca.gov/wastechar/wastegenrates/Residential.htm, accessed December 2017.

A major contributor to the total GHG emissions are the emissions from power plants producing the electricity used by the project. This would be principally building heating and cooling, school equipment, and building and area lighting. The CBUSP buildings would be built to meet California Green Building standards and using high-efficiency lighting would reduce these energy-related GHG emissions. For the purpose of analysis for this project, it is assumed that the above-mentioned energy efficiency measures would result in a 15 percent reduction in energy usage.

Further, enhanced water conservation measures, such as drought-resistant landscaping, low-flow fixtures, and water efficient appliances would reduce water usage by 20 percent. Enhanced waste handling procedures and improved recycling would reduce waste-related GHG emissions by a similar 20 percent.

However, there are no mitigation measures that can feasibly be applied to the mobile sources, as these are all privately owned vehicles that are out of the control of the City and California Baptist University. Table N shows the reduced GHG emissions with all feasible mitigation applied. The 22.656 MT CO_2e/yr is greater than the SCAQMD-recommended interim threshold of 3,000 MT CO_2e/yr. Therefore, the proposed project would potentially result in a significant and unavoidable impact for GHG emissions.

Table N: Operational Greenhouse Gas Emissions With Mitigation

Source	Pollutant Emissions, MT/year					
	Bio- CO_2	NBio- CO_2	Total CO_2	CH_4	N_2O	CO_2e
Construction emissions amortized over 30 years	0	567	567	<1	0	567
Operational Emissions						
Area Sources	0	67	67	<1	0	68
Energy Sources	0	13,337	13,337	<1	<1	13,374
Mobile Sources	0	4,708	4,708	<1	0	4,717
Waste Sources	413	0	413	24	0	1,024
Water Usage	68	2,610	2,678	7	<1	2,905
Total Project Emissions	**481**	**21,289**	**21,770**	**31**	**0**	**22,656**
					SCAQMD Threshold	**3,000**
					Significant?	**Yes**

Source: Compiled by LSA (December 2017).
Note: While the CH_4 and N_2O emissions are shown as zero, some are actually just less than 1. However, they do contribute to the CO_2e total.
Bio-CO_2 = biologically generated CO_2
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
MT/yr = metric tons per year
N_2O = nitrous oxide
NBio-CO_2 = Non-biologically generated CO_2

LONG-TERM MICROSCALE (CARBON MONOXIDE HOT SPOT) ANALYSIS

Vehicular trips associated with the proposed project would contribute to congestion at intersections and along roadway segments in the project vicinity. Localized air quality impacts would occur when emissions from vehicular traffic increase as a result of the proposed project. The primary mobile-source pollutant of local concern is CO, a direct function of vehicle idling time and, thus, of traffic

flow conditions. CO transport is extremely limited; under normal meteorological conditions, CO disperses rapidly with distance from the source. However, under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels, affecting local sensitive receptors (e.g., residents, school children, the elderly, and hospital patients).

Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service (LOS) E or worse, 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.

When the SCAQMD *CEQA Air Quality Handbook* (SCAQMD 1993) was published, the Basin was designated nonattainment under the CAAQS and NAAQS for CO. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the Basin have steadily declined. In 2007, the Basin was redesignated as attainment for CO under both the CAAQS and NAAQS. As identified within SCAQMD's 2003 AQMP (SCAQMD 2003) and the *2005 Carbon Monoxide Resignation Request and Maintenance Plan* (SCAQMD 2005), peak carbon monoxide concentrations in the Basin were a result of unusual meteorological and topographical conditions and not a result of congestion at a particular intersection.

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. Existing CO concentrations in the immediate project vicinity are not available. Ambient CO levels monitored at the Riverside-Rubidoux Station showed a highest recorded 1-hour concentration of 4.1 ppm (the State standard is 20 ppm) and a highest 8-hour concentration of 1.9 ppm (the State standard is 9 ppm) during the past 3 years (Table E). The highest CO concentrations would normally occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst-case analysis.

As described in the *California Baptist University Traffic Impact Analysis* (Rick Engineering, December 2016) prepared for the proposed project, all study area intersections currently operate at satisfactory LOS e.g., no intersections predicted to operate at LOS E or F. Intersections operating at higher LOS levels mean vehicles spend more time idling, thus causing higher CO emissions. With addition of the project in the existing setting with recommended improvements, all study area intersections would continue to operate at satisfactory LOS. An independent CO hot spot analysis was conducted at four intersections in Los Angeles County that are much busier than any in the project vicinity at the peak morning and afternoon periods and none were predicted to violate any CO standards.[1]

Therefore, the project can be implemented in an existing setting with no significant peak-hour intersection impacts. Given the extremely low level of CO concentrations in the project area, and no

[1] The four intersections were Long Beach Boulevard/Imperial Highway; Wilshire Boulevard/Veteran Avenue; Sunset Boulevard/Highland Avenue; and La Cienega Boulevard/Century Boulevard. The busiest intersection evaluated (Wilshire Boulevard/Veteran Avenue) had a daily traffic volume of approximately 100,000 vehicles and LOS E in the morning peak hour and LOS F in the evening peak hour.

project-traffic related impacts at any intersections, project-related vehicle emissions are not expected to result in the CO concentrations exceeding the State or federal CO standards.

AIR QUALITY MANAGEMENT PLAN CONSISTENCY

A consistency determination plays an essential role in local agency project review by linking local planning and unique individual projects to the air quality plans. A consistency determination fulfills the CEQA goal of fully informing local agency decision-makers of the environmental costs of the project under consideration at a stage early enough to ensure that air quality concerns are addressed. Only new or amended General Plan elements, Specific Plans, and significantly unique projects need to undergo a consistency review due to the air quality plan strategy being based on projections from local General Plans.

Projects are considered consistent with, and would not conflict with or obstruct implementation of, the AQMP if the growth in socioeconomic factors (e.g., population, employment) is consistent with the underlying regional plans used to develop the AQMP. The future emissions forecasts are primarily based on demographic and economic growth projections provided by SCAG. Thus, demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by SCAG for their 2016 Regional Transportation Plan were used to estimate future emissions in the Final 2016 AQMP (SCAQMD 2016).

Pursuant to the methodology provided in Chapter 12 of the 1993 SCAQMD *CEQA Air Quality Handbook,* consistency with the Basin 2016 AQMP is affirmed when a project (1) does not increase the frequency or severity of an air quality standards violation or cause a new violation and (2) is consistent with the growth assumptions in the AQMP. Consistency review is presented as follows:

1. The project would result in short-term construction and long-term operational pollutant emissions that are all less than the CEQA significance emissions thresholds established by SCAQMD, as demonstrated above; therefore, the project could not result in an increase in the frequency or severity of any air quality standards violation and will not cause a new air quality standard violation.

2. The *CEQA Air Quality Handbook* indicates that consistency with AQMP growth assumptions must be analyzed for new or amended General Plan elements, Specific Plans, and significant projects. Significant projects include airports, electrical generating facilities, petroleum and gas refineries, designation of oil drilling districts, water ports, solid waste disposal sites, and offshore drilling facilities; therefore, the proposed project is not defined as significant.

Therefore, based on the consistency analysis presented above, the proposed project is consistent with the current regional AQMP.

STANDARD CONDITIONS

Construction

The project is required to comply with regional rules that assist in reducing short-term air pollutant emissions. SCAQMD Rule 403 requires that fugitive dust be controlled with best-available control

measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 402 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site. Applicable dust suppression techniques from Rule 403 are summarized below. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus, the PM_{10} component). Compliance with these rules would reduce impacts on nearby sensitive receptors (SCAQMD Rule 403).[1] As shown in Table H, implementation of Rule 403 measures results in dust emissions below SCAQMD thresholds.

The applicable Rule 403 measures are as follows:

- Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
- Water active sites at least twice daily (locations where grading is to occur will be thoroughly watered prior to earthmoving).
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 0.6 meters (2 feet) of freeboard (vertical space between the top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code Section 23114.
- Pave construction access roads at least 30 meters (100 feet) onto the site from the main road.
- Reduce traffic speeds on all unpaved roads to 15 miles per hour or less.

The applicable California Department of Resources Recycling and Recovery (CalRecycle) Sustainable (Green) Building Program Measures are:

- Recycle/reuse at least 50 percent of the construction material (including, but not limited to, soil, mulch, vegetation, concrete, lumber, metal, and cardboard).[2]
- Use "green building materials" such as those materials that are rapidly renewable or resource-efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the project, as specified on the CalRecycle website.[3]

Operations

The proposed project is required to comply with Title 24 of the California Code of Regulations established by the California Energy Commission regarding energy conservation and green building standards. The project applicant shall incorporate the following in building plans:

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1 SCAQMD. Rule 403. Website: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf, accessed December 2017.

2 CalRecycle. Construction and Demolition Debris Recycling. Website: http://www.calrecycle.ca.gov/ConDemo, accessed December 2017.

3 CalRecycle. Website: http://www.calrecycle.ca.gov, accessed December 2017.

- Low-emission water heaters shall be used. Solar water heaters are encouraged.
- Exterior windows shall utilize window treatments for efficient energy conservation.

These measures will result in reduced emissions during the construction and operation phases of the proposed project.

Project Elements That Can Reduce Impacts

The proposed CBUSP, as amended, provides a framework to guide development of campus boundary and facility expansions. All future developments and major renovations to CBU will incorporate the following sustainable design elements, as they apply to reducing impacts to air quality, in accordance with the proposed CBUSP, as amended:

- Nonessential exterior lighting shall be turned off by automatic controllers from 11:00 P.M. to the following evening at dusk. Where feasible, essential lighting shall be equipped with occupancy-sensing controls to reduce power to provide lighting at minimum safety thresholds when areas are unoccupied. Lighting shall be ramped up to full power (based on zones) when motion is detected in the vicinity.

- New construction projects shall be designed to maximize daylight access for interior occupied spaces. Top lighting and side lighting strategies shall be combined to optimize daylight access for building occupants. Daylighting strategies to be investigated for feasibility include, but are not limited to exterior/interior light shelves, skylights and monitors, clerestory windows, tubular skylights, and light wells.

- Where feasible, waste heat recovery systems will be incorporated to capture heat from drainage water to pre-heat domestic water supplies.

- All new projects shall be designed to perform, at a minimum, per the 2016 Title 24 Energy Code base case.

- All new development and retrofit projects shall include opportunities for energy efficiency incentive funding through the Riverside Public Utilities Programs and Services.

- The installation and use of on-site renewable energy systems shall be investigated to reduce demand on existing energy grid infrastructure and to support the City of Riverside Green Action Plan goals.

- New development projects will incorporate high-efficiency mechanical systems as warranted. The University will investigate the potential for incorporation of highly efficient systems and passive or mixed mode (mechanical and natural ventilation) systems.

- The University will reduce energy consumption through ongoing monitoring and re/retro commissioning of building systems to ensure optimal operation.

- To achieve City of Riverside Green Action Plan goals, the University will consider introducing renewable energy such as photovoltaic and solar water heating into new construction projects and in the renovation of academic and residential facilities. Installations on roofs and inconspicuous areas can minimize the visual impact to the campus architecture while still providing energy offsets to essential areas within the campus.

MITIGATION MEASURES

To ensure that the proposed project complies with and would not conflict with or impede the implementation of reduction goals identified in AB 32, the Governor's EO S-3-05, and other strategies to help reduce GHGs to the level proposed by the Governor, the project will implement a variety of measures that will reduce its GHG emissions. To the extent feasible, and to the satisfaction of the City, the following measures shall be incorporated into the design of the project:

MM-1 Energy Efficiency Measures

- Design all project buildings to meet or exceed the California Building Code's (CBC) Title 24 energy standard, including, but not limited to, any combination of the following:
  - Increase insulation such that heat transfer and thermal bridging is minimized;
  - Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption; and
  - Incorporate ENERGY STAR® or better rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment.
- Install efficient lighting and lighting control systems. Use daylight as an integral part of the lighting systems in buildings.

MM-2 Water Conservation and Efficiency Measures

- Devise a comprehensive water conservation strategy appropriate for the project and its location. The strategy may include the following, plus other innovative measures that may be appropriate:
  - Create water-efficient landscapes within the development.
  - Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls.
  - Use reclaimed water, if available, for landscape irrigation within the project. Install the infrastructure to deliver and use reclaimed water, if available.
  - Design buildings to be water-efficient. Install water-efficient fixtures and appliances, including low-flow faucets and waterless urinals.
  - Restrict watering methods (e.g., prohibit systems that apply water to nonvegetated surfaces) and control runoff.

In addition, the project would be subject to all applicable regulatory requirements, which would also reduce the GHG emissions of the project. With implementation of MM-1 and MM-2 and application of regulatory requirements, the project would not conflict with or impede implementation of reduction goals identified in AB 32, the Governor's EO S-3-05, and other strategies to help reduce GHGs to the level proposed by the Governor. However, the mitigated levels of GHG emissions shown in Table N would remain significant.

CUMULATIVE IMPACTS

The cumulative impacts analysis is based on projections in the regional AQMP. As described in the consistency analysis presented above, the proposed project is consistent with the growth assumptions in the City's General Plan, the 2016 RTP/SCS, and the regional AQMP. Further, the project does not increase the frequency or severity of an air quality standards violation or cause a new violation. As described in the *California Baptist University Traffic Impact Analysis* (Rick Engineering 2016), the cumulative analysis includes projects in Riverside and adjacent cities (i.e., Jurupa Valley, Loma Linda, Corona, etc.). This study area is described as the appropriate tool to evaluate discrete project-related circulation impacts for the City, which encompasses the air quality impacts from the project. The proposed project plus pending and approved baselines (the cumulative scenarios) would not result in any significant LOS change or intersection delay, thus the combined effects of the related projects would be less than significant. Because there is no cumulative significant impact and the proposed project is consistent with the growth assumptions in the 2016 RTP/SCS and the AQMP, the combined effects are not cumulatively significant. Therefore, the proposed project would not result in a significant long-term cumulative impact.

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APPENDIX A

CALEEMOD PRINTOUTS

CBU Specific Plan Amendment No. 1 - Riverside-South Coast County, Annual

CBU Specific Plan Amendment No. 1

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
University/College (4Yr)	3,961.00	Student	16.71	200,000.00	0
Unenclosed Parking Structure	560.00	1000sqft	12.86	560,000.00	0
Apartments Mid Rise	3,961.00	Dwelling Unit	20.00	200,000.00	3961

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - CBU anticipates that 3,961 beds would be needed to reach the proposed bed-to-student ratio and anticipates providing an additional 400,000 square feet of building area for academic purposes

Demolition - Estimated building size to demolish to characterize general remodeling.

Architectural Coating - Assume all architectural coatings comply with SCAQMD Rule 1113.

Vehicle Trips - Traffic study shows total ADT of 5,291 new trips, divided by 3,961 new students to get 1.34 trip rate, applied to all days. Apartment landuse for dorms, all trips covered by University

Area Coating - Assume all architectural coatings comply with SCAQMD Rule 1113.

Construction Off-road Equipment Mitigation - Dust control measures as required by SCAQMD Rule 403.

Fleet Mix - Changed to a representative university fleet mix.

Woodstoves - The residences are student dorms without fireplaces.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	3,366.85	0.00
tblFireplaces	NumberNoFireplace	396.10	3,961.00
tblFireplaces	NumberWood	198.05	0.00
tblFleetMix	HHD	0.07	0.01
tblFleetMix	LDA	0.55	0.81
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT2	0.19	0.05
tblFleetMix	LHD1	0.02	0.01
tblFleetMix	LHD2	4.9700e-003	0.01
tblFleetMix	MCY	4.5470e-003	0.04
tblFleetMix	MDV	0.12	0.01
tblFleetMix	MH	9.6500e-004	0.00
tblFleetMix	MHD	0.02	0.01
tblFleetMix	OBUS	1.3970e-003	0.00
tblFleetMix	SBUS	9.3200e-004	0.00
tblFleetMix	UBUS	1.1600e-003	0.00
tblLandUse	LandUseSquareFeet	728,021.77	200,000.00

tblLandUse	LandUseSquareFeet	3,961,000.00	200,000.00
tblLandUse	LotAcreage	104.24	20.00
tblLandUse	Population	11,328.00	3,961.00
tblVehicleTrips	ST_TR	1.30	1.34
tblVehicleTrips	ST_TR	6.39	0.00
tblVehicleTrips	SU_TR	0.00	1.34
tblVehicleTrips	SU_TR	5.86	0.00
tblVehicleTrips	WD_TR	1.71	1.34
tblVehicleTrips	WD_TR	6.65	0.00
tblWoodstoves	NumberCatalytic	198.05	0.00
tblWoodstoves	NumberNoncatalytic	198.05	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	1.3971	8.7642	10.1484	0.0308	2.6957	0.2756	2.9713	0.8399	0.2563	1.0962	0.0000	2,816.3320	2,816.3320	0.2431	0.0000	2,822.4104
2020	2.3909	11.3178	17.9515	0.0642	5.0192	0.2167	5.2359	1.3432	0.2039	1.5471	0.0000	5,888.5837	5,888.5837	0.3108	0.0000	5,896.3531
2021	2.1929	10.1386	16.4731	0.0624	5.0000	0.1651	5.1651	1.3381	0.1549	1.4930	0.0000	5,725.2206	5,725.2206	0.2917	0.0000	5,732.5132
2022	2.1052	4.3869	7.4885	0.0283	2.3226	0.0798	2.4024	0.6212	0.0747	0.6958	0.0000	2,586.3922	2,586.3922	0.1388	0.0000	2,589.8617
Maximum	**2.3909**	**11.3178**	**17.9515**	**0.0642**	**5.0192**	**0.2756**	**5.2359**	**1.3432**	**0.2563**	**1.5471**	**0.0000**	**5,888.5837**	**5,888.5837**	**0.3108**	**0.0000**	**5,896.3531**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	1.3971	8.7642	10.1484	0.0308	2.3405	0.2756	2.6161	0.6797	0.2563	0.9360	0.0000	2,816.3314	2,816.3314	0.2431	0.0000	2,822.4098
2020	2.3909	11.3178	17.9515	0.0642	5.0192	0.2167	5.2359	1.3432	0.2039	1.5471	0.0000	5,888.5833	5,888.5833	0.3108	0.0000	5,896.3527
2021	2.1929	10.1386	16.4731	0.0624	5.0000	0.1651	5.1651	1.3381	0.1549	1.4930	0.0000	5,725.2202	5,725.2202	0.2917	0.0000	5,732.5129
2022	2.1052	4.3869	7.4885	0.0283	2.3226	0.0798	2.4024	0.6212	0.0747	0.6958	0.0000	2,586.3920	2,586.3920	0.1388	0.0000	2,589.8615
Maximum	**2.3909**	**11.3178**	**17.9515**	**0.0642**	**5.0192**	**0.2756**	**5.2359**	**1.3432**	**0.2563**	**1.5471**	**0.0000**	**5,888.5833**	**5,888.5833**	**0.3108**	**0.0000**	**5,896.3527**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**2.36**	**0.00**	**2.25**	**3.87**	**0.00**	**3.32**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2019**	**3-31-2019**	1.4034	1.4034
2	**4-1-2019**	**6-30-2019**	1.8581	1.8581
3	**7-1-2019**	**9-30-2019**	3.0806	3.0806
4	**10-1-2019**	**12-31-2019**	3.8031	3.8031
5	**1-1-2020**	**3-31-2020**	3.4022	3.4022
6	**4-1-2020**	**6-30-2020**	3.4092	3.4092
7	**7-1-2020**	**9-30-2020**	3.4466	3.4466
8	**10-1-2020**	**12-31-2020**	3.4395	3.4395
9	**1-1-2021**	**3-31-2021**	3.0400	3.0400
10	**4-1-2021**	**6-30-2021**	3.0850	3.0850
11	**7-1-2021**	**9-30-2021**	3.1189	3.1189
12	**10-1-2021**	**12-31-2021**	3.1075	3.1075
13	**1-1-2022**	**3-31-2022**	2.8210	2.8210

14	**4-1-2022**	**6-30-2022**	2.2145	2.2145
15	**7-1-2022**	**9-30-2022**	0.8879	0.8879
		Highest	3.8031	3.8031

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.8349	0.4721	40.9502	2.1600e-003		0.2262	0.2262		0.2262	0.2262	0.0000	66.8375	66.8375	0.0647	0.0000	68.4542
Energy	0.3309	2.8358	1.2629	0.0181		0.2286	0.2286		0.2286	0.2286	0.0000	15,690.8493	15,690.8493	0.3344	0.1162	15,733.8461
Mobile	2.7285	4.1758	25.6275	0.0519	5.9803	0.0405	6.0208	1.5907	0.0376	1.6283	0.0000	4,708.4276	4,708.4276	0.3619	0.0000	4,717.4747
Waste						0.0000	0.0000		0.0000	0.0000	516.5998	0.0000	516.5998	30.5302	0.0000	1,279.8542
Water						0.0000	0.0000		0.0000	0.0000	84.5659	3,262.5539	3,347.1199	8.7571	0.2199	3,631.5644
Total	**5.8943**	**7.4837**	**67.8406**	**0.0721**	**5.9803**	**0.4953**	**6.4756**	**1.5907**	**0.4924**	**2.0831**	**601.1657**	**23,728.6683**	**24,329.8340**	**40.0482**	**0.3361**	**25,431.1935**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.8349	0.4721	40.9502	2.1600e-003		0.2262	0.2262		0.2262	0.2262	0.0000	66.8375	66.8375	0.0647	0.0000	68.4542
Energy	0.3309	2.8358	1.2629	0.0181		0.2286	0.2286		0.2286	0.2286	0.0000	15,690.8493	15,690.8493	0.3344	0.1162	15,733.8461
Mobile	2.7285	4.1758	25.6275	0.0519	5.9803	0.0405	6.0208	1.5907	0.0376	1.6283	0.0000	4,708.4276	4,708.4276	0.3619	0.0000	4,717.4747

Waste						0.0000	0.0000		0.0000	0.0000	516.5998	0.0000	516.5998	30.5302	0.0000	1,279.8542
Water						0.0000	0.0000		0.0000	0.0000	84.5659	3,262.5539	3,347.1199	8.7571	0.2199	3,631.5644
Total	**5.8943**	**7.4837**	**67.8406**	**0.0721**	**5.9803**	**0.4953**	**6.4756**	**1.5907**	**0.4924**	**2.0831**	**601.1657**	**23,728.6683**	**24,329.8340**	**40.0482**	**0.3361**	**25,431.1935**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2019	3/11/2019	5	50	
2	Site Preparation	Site Preparation	3/12/2019	4/22/2019	5	30	
3	Grading	Grading	4/23/2019	8/5/2019	5	75	
4	Building Construction	Building Construction	8/6/2019	6/6/2022	5	740	
5	Paving	Paving	6/7/2022	8/22/2022	5	55	
6	Architectural Coating	Architectural Coating	8/23/2022	11/7/2022	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 12.86

Residential Indoor: 405,000; Residential Outdoor: 135,000; Non-Residential Indoor: 300,000; Non-Residential Outdoor: 100,000; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	455.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	3,171.00	548.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	634.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0495	0.0000	0.0495	7.5000e-003	0.0000	7.5000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0878	0.8946	0.5515	9.7000e-004		0.0449	0.0449		0.0417	0.0417	0.0000	86.5658	86.5658	0.0241	0.0000	87.1679
Total	**0.0878**	**0.8946**	**0.5515**	**9.7000e-004**	**0.0495**	**0.0449**	**0.0944**	**7.5000e-003**	**0.0417**	**0.0492**	**0.0000**	**86.5658**	**86.5658**	**0.0241**	**0.0000**	**87.1679**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3100e-003	0.0596	7.5200e-003	1.7000e-004	3.9200e-003	2.1000e-004	4.1300e-003	1.0800e-003	2.0000e-004	1.2800e-003	0.0000	16.6654	16.6654	1.0900e-003	0.0000	16.6926
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8600e-003	1.3600e-003	0.0142	4.0000e-005	4.1200e-003	3.0000e-005	4.1500e-003	1.0900e-003	2.0000e-005	1.1200e-003	0.0000	3.5610	3.5610	1.0000e-004	0.0000	3.5635
Total	**3.1700e-003**	**0.0609**	**0.0218**	**2.1000e-004**	**8.0400e-003**	**2.4000e-004**	**8.2800e-003**	**2.1700e-003**	**2.2000e-004**	**2.4000e-003**	**0.0000**	**20.2264**	**20.2264**	**1.1900e-003**	**0.0000**	**20.2561**

Mitigated Construction On-Site

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

Category	tons/yr										MT/yr					
Fugitive Dust					0.0223	0.0000	0.0223	3.3700e-003	0.0000	3.3700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0878	0.8946	0.5515	9.7000e-004		0.0449	0.0449		0.0417	0.0417	0.0000	86.5657	86.5657	0.0241	0.0000	87.1678
Total	**0.0878**	**0.8946**	**0.5515**	**9.7000e-004**	**0.0223**	**0.0449**	**0.0672**	**3.3700e-003**	**0.0417**	**0.0451**	**0.0000**	**86.5657**	**86.5657**	**0.0241**	**0.0000**	**87.1678**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3100e-003	0.0596	7.5200e-003	1.7000e-004	3.9200e-003	2.1000e-004	4.1300e-003	1.0800e-003	2.0000e-004	1.2800e-003	0.0000	16.6654	16.6654	1.0900e-003	0.0000	16.6926
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8600e-003	1.3600e-003	0.0142	4.0000e-005	4.1200e-003	3.0000e-005	4.1500e-003	1.0900e-003	2.0000e-005	1.1200e-003	0.0000	3.5610	3.5610	1.0000e-004	0.0000	3.5635
Total	**3.1700e-003**	**0.0609**	**0.0218**	**2.1000e-004**	**8.0400e-003**	**2.4000e-004**	**8.2800e-003**	**2.1700e-003**	**2.2000e-004**	**2.4000e-003**	**0.0000**	**20.2264**	**20.2264**	**1.1900e-003**	**0.0000**	**20.2561**

3.3 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0650	0.6836	0.3310	5.7000e-004		0.0359	0.0359		0.0330	0.0330	0.0000	51.2530	51.2530	0.0162	0.0000	51.6584

Total	**0.0650**	**0.6836**	**0.3310**	**5.7000e-004**	**0.2710**	**0.0359**	**0.3069**	**0.1490**	**0.0330**	**0.1820**	**0.0000**	**51.2530**	**51.2530**	**0.0162**	**0.0000**	**51.6584**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3400e-003	9.8000e-004	0.0102	3.0000e-005	2.9700e-003	2.0000e-005	2.9900e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.5639	2.5639	7.0000e-005	0.0000	2.5657
Total	**1.3400e-003**	**9.8000e-004**	**0.0102**	**3.0000e-005**	**2.9700e-003**	**2.0000e-005**	**2.9900e-003**	**7.9000e-004**	**2.0000e-005**	**8.1000e-004**	**0.0000**	**2.5639**	**2.5639**	**7.0000e-005**	**0.0000**	**2.5657**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1220	0.0000	0.1220	0.0670	0.0000	0.0670	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0650	0.6836	0.3309	5.7000e-004		0.0359	0.0359		0.0330	0.0330	0.0000	51.2530	51.2530	0.0162	0.0000	51.6584
Total	**0.0650**	**0.6836**	**0.3309**	**5.7000e-004**	**0.1220**	**0.0359**	**0.1578**	**0.0670**	**0.0330**	**0.1000**	**0.0000**	**51.2530**	**51.2530**	**0.0162**	**0.0000**	**51.6584**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3400e-003	9.8000e-004	0.0102	3.0000e-005	2.9700e-003	2.0000e-005	2.9900e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.5639	2.5639	7.0000e-005	0.0000	2.5657
Total	**1.3400e-003**	**9.8000e-004**	**0.0102**	**3.0000e-005**	**2.9700e-003**	**2.0000e-005**	**2.9900e-003**	**7.9000e-004**	**2.0000e-005**	**8.1000e-004**	**0.0000**	**2.5639**	**2.5639**	**7.0000e-005**	**0.0000**	**2.5657**

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3253	0.0000	0.3253	0.1349	0.0000	0.1349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1777	2.0445	1.2516	2.3300e-003		0.0894	0.0894		0.0822	0.0822	0.0000	208.8800	208.8800	0.0661	0.0000	210.5321
Total	**0.1777**	**2.0445**	**1.2516**	**2.3300e-003**	**0.3253**	**0.0894**	**0.4146**	**0.1349**	**0.0822**	**0.2171**	**0.0000**	**208.8800**	**208.8800**	**0.0661**	**0.0000**	**210.5321**

Unmitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7300e-003	2.7100e-003	0.0285	8.0000e-005	8.2400e-003	5.0000e-005	8.3000e-003	2.1900e-003	5.0000e-005	2.2400e-003	0.0000	7.1221	7.1221	1.9000e-004	0.0000	7.1269
Total	**3.7300e-003**	**2.7100e-003**	**0.0285**	**8.0000e-005**	**8.2400e-003**	**5.0000e-005**	**8.3000e-003**	**2.1900e-003**	**5.0000e-005**	**2.2400e-003**	**0.0000**	**7.1221**	**7.1221**	**1.9000e-004**	**0.0000**	**7.1269**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1464	0.0000	0.1464	0.0607	0.0000	0.0607	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1777	2.0445	1.2516	2.3300e-003		0.0894	0.0894		0.0822	0.0822	0.0000	208.8797	208.8797	0.0661	0.0000	210.5319
Total	**0.1777**	**2.0445**	**1.2516**	**2.3300e-003**	**0.1464**	**0.0894**	**0.2357**	**0.0607**	**0.0822**	**0.1429**	**0.0000**	**208.8797**	**208.8797**	**0.0661**	**0.0000**	**210.5319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7300e-003	2.7100e-003	0.0285	8.0000e-005	8.2400e-003	5.0000e-005	8.3000e-003	2.1900e-003	5.0000e-005	2.2400e-003	0.0000	7.1221	7.1221	1.9000e-004	0.0000	7.1269
Total	**3.7300e-003**	**2.7100e-003**	**0.0285**	**8.0000e-005**	**8.2400e-003**	**5.0000e-005**	**8.3000e-003**	**2.1900e-003**	**5.0000e-005**	**2.2400e-003**	**0.0000**	**7.1221**	**7.1221**	**1.9000e-004**	**0.0000**	**7.1269**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1251	1.1172	0.9097	1.4300e-003		0.0684	0.0684		0.0643	0.0643	0.0000	124.6052	124.6052	0.0304	0.0000	125.3641
Total	**0.1251**	**1.1172**	**0.9097**	**1.4300e-003**		**0.0684**	**0.0684**		**0.0643**	**0.0643**	**0.0000**	**124.6052**	**124.6052**	**0.0304**	**0.0000**	**125.3641**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0984	3.3518	0.6672	7.5200e-003	0.1835	0.0252	0.2087	0.0529	0.0242	0.0771	0.0000	719.1756	719.1756	0.0613	0.0000	720.7077
Worker	0.8347	0.6080	6.3770	0.0177	1.8472	0.0116	1.8588	0.4905	0.0107	0.5012	0.0000	1,595.9399	1,595.9399	0.0437	0.0000	1,597.0315
Total	**0.9332**	**3.9598**	**7.0442**	**0.0252**	**2.0307**	**0.0368**	**2.0675**	**0.5434**	**0.0348**	**0.5783**	**0.0000**	**2,315.1155**	**2,315.1155**	**0.1049**	**0.0000**	**2,317.7391**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1251	1.1172	0.9097	1.4300e-003		0.0684	0.0684		0.0643	0.0643	0.0000	124.6051	124.6051	0.0304	0.0000	125.3640
Total	**0.1251**	**1.1172**	**0.9097**	**1.4300e-003**		**0.0684**	**0.0684**		**0.0643**	**0.0643**	**0.0000**	**124.6051**	**124.6051**	**0.0304**	**0.0000**	**125.3640**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0984	3.3518	0.6672	7.5200e-003	0.1835	0.0252	0.2087	0.0529	0.0242	0.0771	0.0000	719.1756	719.1756	0.0613	0.0000	720.7077
Worker	0.8347	0.6080	6.3770	0.0177	1.8472	0.0116	1.8588	0.4905	0.0107	0.5012	0.0000	1,595.9399	1,595.9399	0.0437	0.0000	1,597.0315
Total	**0.9332**	**3.9598**	**7.0442**	**0.0252**	**2.0307**	**0.0368**	**2.0675**	**0.5434**	**0.0348**	**0.5783**	**0.0000**	**2,315.1155**	**2,315.1155**	**0.1049**	**0.0000**	**2,317.7391**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4091	303.4091	0.0740	0.0000	305.2596

Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4091**	**303.4091**	**0.0740**	**0.0000**	**305.2596**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2040	7.4667	1.4608	0.0185	0.4534	0.0422	0.4956	0.1308	0.0404	0.1712	0.0000	1,765.1784	1,765.1784	0.1411	0.0000	1,768.7060
Worker	1.9092	1.3377	14.2836	0.0423	4.5658	0.0281	4.5939	1.2124	0.0259	1.2383	0.0000	3,819.9962	3,819.9962	0.0957	0.0000	3,822.3875
Total	**2.1132**	**8.8045**	**15.7444**	**0.0607**	**5.0192**	**0.0703**	**5.0895**	**1.3432**	**0.0663**	**1.4095**	**0.0000**	**5,585.1746**	**5,585.1746**	**0.2368**	**0.0000**	**5,591.0935**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4087	303.4087	0.0740	0.0000	305.2592
Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4087**	**303.4087**	**0.0740**	**0.0000**	**305.2592**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2040	7.4667	1.4608	0.0185	0.4534	0.0422	0.4956	0.1308	0.0404	0.1712	0.0000	1,765.1784	1,765.1784	0.1411	0.0000	1,768.7060
Worker	1.9092	1.3377	14.2836	0.0423	4.5658	0.0281	4.5939	1.2124	0.0259	1.2383	0.0000	3,819.9962	3,819.9962	0.0957	0.0000	3,822.3875
Total	**2.1132**	**8.8045**	**15.7444**	**0.0607**	**5.0192**	**0.0703**	**5.0895**	**1.3432**	**0.0663**	**1.4095**	**0.0000**	**5,585.1746**	**5,585.1746**	**0.2368**	**0.0000**	**5,591.0935**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2867	302.2867	0.0729	0.0000	304.1099
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2867**	**302.2867**	**0.0729**	**0.0000**	**304.1099**

Unmitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1706	6.6681	1.2830	0.0182	0.4517	0.0128	0.4644	0.1303	0.0122	0.1425	0.0000	1,744.7499	1,744.7499	0.1331	0.0000	1,748.0773
Worker	1.7742	1.1956	13.0271	0.0407	4.5484	0.0273	4.5756	1.2078	0.0251	1.2329	0.0000	3,678.1841	3,678.1841	0.0857	0.0000	3,680.3260
Total	**1.9448**	**7.8637**	**14.3100**	**0.0589**	**5.0000**	**0.0400**	**5.0400**	**1.3381**	**0.0373**	**1.3754**	**0.0000**	**5,422.9340**	**5,422.9340**	**0.2188**	**0.0000**	**5,428.4034**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2863	302.2863	0.0729	0.0000	304.1095
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2863**	**302.2863**	**0.0729**	**0.0000**	**304.1095**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1706	6.6681	1.2830	0.0182	0.4517	0.0128	0.4644	0.1303	0.0122	0.1425	0.0000	1,744.7499	1,744.7499	0.1331	0.0000	1,748.0773
Worker	1.7742	1.1956	13.0271	0.0407	4.5484	0.0273	4.5756	1.2078	0.0251	1.2329	0.0000	3,678.1841	3,678.1841	0.0857	0.0000	3,680.3260
Total	**1.9448**	**7.8637**	**14.3100**	**0.0589**	**5.0000**	**0.0400**	**5.0400**	**1.3381**	**0.0373**	**1.3754**	**0.0000**	**5,422.9340**	**5,422.9340**	**0.2188**	**0.0000**	**5,428.4034**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0947	0.8667	0.9082	1.4900e-003		0.0449	0.0449		0.0422	0.0422	0.0000	128.6075	128.6075	0.0308	0.0000	129.3778
Total	**0.0947**	**0.8667**	**0.9082**	**1.4900e-003**		**0.0449**	**0.0449**		**0.0422**	**0.0422**	**0.0000**	**128.6075**	**128.6075**	**0.0308**	**0.0000**	**129.3778**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0677	2.6717	0.5082	7.6900e-003	0.1921	4.5600e-003	0.1966	0.0554	4.3600e-003	0.0598	0.0000	735.6373	735.6373	0.0536	0.0000	736.9780
Worker	0.7070	0.4575	5.1037	0.0167	1.9344	0.0113	1.9457	0.5137	0.0104	0.5240	0.0000	1,507.2022	1,507.2022	0.0328	0.0000	1,508.0210
Total	**0.7747**	**3.1292**	**5.6119**	**0.0244**	**2.1264**	**0.0159**	**2.1423**	**0.5691**	**0.0148**	**0.5838**	**0.0000**	**2,242.8395**	**2,242.8395**	**0.0864**	**0.0000**	**2,244.9989**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0947	0.8667	0.9082	1.4900e-003		0.0449	0.0449		0.0422	0.0422	0.0000	128.6074	128.6074	0.0308	0.0000	129.3776
Total	**0.0947**	**0.8667**	**0.9082**	**1.4900e-003**		**0.0449**	**0.0449**		**0.0422**	**0.0422**	**0.0000**	**128.6074**	**128.6074**	**0.0308**	**0.0000**	**129.3776**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0677	2.6717	0.5082	7.6900e-003	0.1921	4.5600e-003	0.1966	0.0554	4.3600e-003	0.0598	0.0000	735.6373	735.6373	0.0536	0.0000	736.9780
Worker	0.7070	0.4575	5.1037	0.0167	1.9344	0.0113	1.9457	0.5137	0.0104	0.5240	0.0000	1,507.2022	1,507.2022	0.0328	0.0000	1,508.0210
Total	**0.7747**	**3.1292**	**5.6119**	**0.0244**	**2.1264**	**0.0159**	**2.1423**	**0.5691**	**0.0148**	**0.5838**	**0.0000**	**2,242.8395**	**2,242.8395**	**0.0864**	**0.0000**	**2,244.9989**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0303	0.3059	0.4010	6.3000e-004		0.0156	0.0156		0.0144	0.0144	0.0000	55.0758	55.0758	0.0178	0.0000	55.5211

Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0303**	**0.3059**	**0.4010**	**6.3000e-004**		**0.0156**	**0.0156**		**0.0144**	**0.0144**	**0.0000**	**55.0758**	**55.0758**	**0.0178**	**0.0000**	**55.5211**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6600e-003	1.0700e-003	0.0120	4.0000e-005	4.5300e-003	3.0000e-005	4.5600e-003	1.2000e-003	2.0000e-005	1.2300e-003	0.0000	3.5327	3.5327	8.0000e-005	0.0000	3.5346
Total	**1.6600e-003**	**1.0700e-003**	**0.0120**	**4.0000e-005**	**4.5300e-003**	**3.0000e-005**	**4.5600e-003**	**1.2000e-003**	**2.0000e-005**	**1.2300e-003**	**0.0000**	**3.5327**	**3.5327**	**8.0000e-005**	**0.0000**	**3.5346**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0303	0.3059	0.4010	6.3000e-004		0.0156	0.0156		0.0144	0.0144	0.0000	55.0757	55.0757	0.0178	0.0000	55.5210
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0303**	**0.3059**	**0.4010**	**6.3000e-004**		**0.0156**	**0.0156**		**0.0144**	**0.0144**	**0.0000**	**55.0757**	**55.0757**	**0.0178**	**0.0000**	**55.5210**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6600e-003	1.0700e-003	0.0120	4.0000e-005	4.5300e-003	3.0000e-005	4.5600e-003	1.2000e-003	2.0000e-005	1.2300e-003	0.0000	3.5327	3.5327	8.0000e-005	0.0000	3.5346
Total	**1.6600e-003**	**1.0700e-003**	**0.0120**	**4.0000e-005**	**4.5300e-003**	**3.0000e-005**	**4.5600e-003**	**1.2000e-003**	**2.0000e-005**	**1.2300e-003**	**0.0000**	**3.5327**	**3.5327**	**8.0000e-005**	**0.0000**	**3.5346**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.1282					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.6200e-003	0.0387	0.0499	8.0000e-005		2.2500e-003	2.2500e-003		2.2500e-003	2.2500e-003	0.0000	7.0215	7.0215	4.6000e-004	0.0000	7.0329
Total	**1.1338**	**0.0387**	**0.0499**	**8.0000e-005**		**2.2500e-003**	**2.2500e-003**		**2.2500e-003**	**2.2500e-003**	**0.0000**	**7.0215**	**7.0215**	**4.6000e-004**	**0.0000**	**7.0329**

Unmitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0700	0.0453	0.5056	1.6500e-003	0.1916	1.1200e-003	0.1928	0.0509	1.0300e-003	0.0519	0.0000	149.3153	149.3153	3.2400e-003	0.0000	149.3964
Total	**0.0700**	**0.0453**	**0.5056**	**1.6500e-003**	**0.1916**	**1.1200e-003**	**0.1928**	**0.0509**	**1.0300e-003**	**0.0519**	**0.0000**	**149.3153**	**149.3153**	**3.2400e-003**	**0.0000**	**149.3964**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.1282					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.6200e-003	0.0387	0.0499	8.0000e-005		2.2500e-003	2.2500e-003		2.2500e-003	2.2500e-003	0.0000	7.0214	7.0214	4.6000e-004	0.0000	7.0329
Total	**1.1338**	**0.0387**	**0.0499**	**8.0000e-005**		**2.2500e-003**	**2.2500e-003**		**2.2500e-003**	**2.2500e-003**	**0.0000**	**7.0214**	**7.0214**	**4.6000e-004**	**0.0000**	**7.0329**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0700	0.0453	0.5056	1.6500e-003	0.1916	1.1200e-003	0.1928	0.0509	1.0300e-003	0.0519	0.0000	149.3153	149.3153	3.2400e-003	0.0000	149.3964
Total	**0.0700**	**0.0453**	**0.5056**	**1.6500e-003**	**0.1916**	**1.1200e-003**	**0.1928**	**0.0509**	**1.0300e-003**	**0.0519**	**0.0000**	**149.3153**	**149.3153**	**3.2400e-003**	**0.0000**	**149.3964**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.7285	4.1758	25.6275	0.0519	5.9803	0.0405	6.0208	1.5907	0.0376	1.6283	0.0000	4,708.4276	4,708.4276	0.3619	0.0000	4,717.4747
Unmitigated	2.7285	4.1758	25.6275	0.0519	5.9803	0.0405	6.0208	1.5907	0.0376	1.6283	0.0000	4,708.4276	4,708.4276	0.3619	0.0000	4,717.4747

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unenclosed Parking Structure	0.00	0.00	0.00		
University/College (4Yr)	5,307.74	5,307.74	5307.74	15,943,854	15,943,854
Apartments Mid Rise	0.00	0.00	0.00		
Total	5,307.74	5,307.74	5,307.74	15,943,854	15,943,854

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unenclosed Parking Structure	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
University/College (4Yr)	16.60	8.40	6.90	6.40	88.60	5.00	91	9	0
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unenclosed Parking Structure	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
University/College (4Yr)	0.806500	0.053800	0.053800	0.010000	0.010000	0.010000	0.010000	0.010000	0.000000	0.000000	0.035900	0.000000	0.000000
Apartments Mid Rise	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	12,416.1605	12,416.1605	0.2716	0.0562	12,439.6975
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	12,416.1605	12,416.1605	0.2716	0.0562	12,439.6975
NaturalGas Mitigated	0.3309	2.8358	1.2629	0.0181		0.2286	0.2286		0.2286	0.2286	0.0000	3,274.6888	3,274.6888	0.0628	0.0600	3,294.1487
NaturalGas Unmitigated	0.3309	2.8358	1.2629	0.0181		0.2286	0.2286		0.2286	0.2286	0.0000	3,274.6888	3,274.6888	0.0628	0.0600	3,294.1487

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	5.85994e+007	0.3160	2.7002	1.1490	0.0172		0.2183	0.2183		0.2183	0.2183	0.0000	3,127.0845	3,127.0845	0.0599	0.0573	3,145.6672

Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
University/College (4Yr)	2.766e+006	0.0149	0.1356	0.1139	8.1000e-004		0.0103	0.0103		0.0103	0.0103	0.0000	147.6043	147.6043	2.8300e-003	2.7100e-003	148.4814
Total		**0.3309**	**2.8358**	**1.2629**	**0.0181**		**0.2286**	**0.2286**		**0.2286**	**0.2286**	**0.0000**	**3,274.6888**	**3,274.6888**	**0.0628**	**0.0600**	**3,294.1487**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	5.85994e+007	0.3160	2.7002	1.1490	0.0172		0.2183	0.2183		0.2183	0.2183	0.0000	3,127.0845	3,127.0845	0.0599	0.0573	3,145.6672
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
University/College (4Yr)	2.766e+006	0.0149	0.1356	0.1139	8.1000e-004		0.0103	0.0103		0.0103	0.0103	0.0000	147.6043	147.6043	2.8300e-003	2.7100e-003	148.4814
Total		**0.3309**	**2.8358**	**1.2629**	**0.0181**		**0.2286**	**0.2286**		**0.2286**	**0.2286**	**0.0000**	**3,274.6888**	**3,274.6888**	**0.0628**	**0.0600**	**3,294.1487**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.80927e+007	10,879.2256	0.2380	0.0492	10,899.8491
Unenclosed Parking Structure	980000	589.2786	0.0129	2.6700e-003	590.3957
University/College (4Yr)	1.576e+006	947.6563	0.0207	4.2900e-003	949.4527
Total		**12,416.1605**	**0.2716**	**0.0562**	**12,439.6975**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.80927e+007	10,879.2256	0.2380	0.0492	10,899.8491
Unenclosed Parking Structure	980000	589.2786	0.0129	2.6700e-003	590.3957
University/College (4Yr)	1.576e+006	947.6563	0.0207	4.2900e-003	949.4527
Total		**12,416.1605**	**0.2716**	**0.0562**	**12,439.6975**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.8349	0.4721	40.9502	2.1600e-003		0.2262	0.2262		0.2262	0.2262	0.0000	66.8375	66.8375	0.0647	0.0000	68.4542
Unmitigated	2.8349	0.4721	40.9502	2.1600e-003		0.2262	0.2262		0.2262	0.2262	0.0000	66.8375	66.8375	0.0647	0.0000	68.4542

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1128					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4816					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.2405	0.4721	40.9502	2.1600e-003		0.2262	0.2262		0.2262	0.2262	0.0000	66.8375	66.8375	0.0647	0.0000	68.4542
Total	**2.8349**	**0.4721**	**40.9502**	**2.1600e-003**		**0.2262**	**0.2262**		**0.2262**	**0.2262**	**0.0000**	**66.8375**	**66.8375**	**0.0647**	**0.0000**	**68.4542**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1128					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4816					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.2405	0.4721	40.9502	2.1600e-003		0.2262	0.2262		0.2262	0.2262	0.0000	66.8375	66.8375	0.0647	0.0000	68.4542
Total	**2.8349**	**0.4721**	**40.9502**	**2.1600e-003**		**0.2262**	**0.2262**		**0.2262**	**0.2262**	**0.0000**	**66.8375**	**66.8375**	**0.0647**	**0.0000**	**68.4542**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3,347.1199	8.7571	0.2199	3,631.5644
Unmitigated	3,347.1199	8.7571	0.2199	3,631.5644

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	258.075 / 162.7	3,189.4106	8.4774	0.2126	3,464.7080
Unenclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
University/College (4Yr)	8.4809 / 13.265	157.7093	0.2797	7.2300e-003	166.8564
Total		**3,347.1199**	**8.7571**	**0.2199**	**3,631.5644**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e

Land Use	Mgal	MT/yr			
Apartments Mid Rise	258.075 / 162.7	3,189.4106	8.4774	0.2126	3,464.7080
Unenclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
University/College (4Yr)	8.4809 / 13.265	157.7093	0.2797	7.2300e-003	166.8564
Total		**3,347.1199**	**8.7571**	**0.2199**	**3,631.5644**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	516.5998	30.5302	0.0000	1,279.8542
Unmitigated	516.5998	30.5302	0.0000	1,279.8542

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			

Apartments Mid Rise	1822.06	369.8617	21.8582	0.0000	916.3167
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
University/College (4Yr)	722.88	146.7381	8.6720	0.0000	363.5375
Total		**516.5998**	**30.5302**	**0.0000**	**1,279.8542**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	1822.06	369.8617	21.8582	0.0000	916.3167
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
University/College (4Yr)	722.88	146.7381	8.6720	0.0000	363.5375
Total		**516.5998**	**30.5302**	**0.0000**	**1,279.8542**

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

CBU Specific Plan Amendment No. 1 - Riverside-South Coast County, Summer

CBU Specific Plan Amendment No. 1

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
University/College (4Yr)	3,961.00	Student	16.71	200,000.00	0
Unenclosed Parking Structure	560.00	1000sqft	12.86	560,000.00	0
Apartments Mid Rise	3,961.00	Dwelling Unit	20.00	200,000.00	3961

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - CBU anticipates that 3,961 beds would be needed to reach the proposed bed-to-student ratio and anticipates providing an additional 400,000 square feet of building area for academic purposes

Demolition - Estimated building size to demolish to characterize general remodeling.

Architectural Coating - Assume all architectural coatings comply with SCAQMD Rule 1113.

Vehicle Trips - Traffic study shows total ADT of 5,291 new trips, divided by 3,961 new students to get 1.34 trip rate, applied to all days. Apartment landuse for dorms, all trips covered by University

Area Coating - Assume all architectural coatings comply with SCAQMD Rule 1113.

Construction Off-road Equipment Mitigation - Dust control measures as required by SCAQMD Rule 403.

Fleet Mix - Changed to a representative university fleet mix.

Woodstoves - The residences are student dorms without fireplaces.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	3,366.85	0.00
tblFireplaces	NumberNoFireplace	396.10	3,961.00
tblFireplaces	NumberWood	198.05	0.00
tblFleetMix	HHD	0.07	0.01
tblFleetMix	LDA	0.55	0.81
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT2	0.19	0.05
tblFleetMix	LHD1	0.02	0.01
tblFleetMix	LHD2	4.9700e-003	0.01
tblFleetMix	MCY	4.5470e-003	0.04
tblFleetMix	MDV	0.12	0.01
tblFleetMix	MH	9.6500e-004	0.00
tblFleetMix	MHD	0.02	0.01
tblFleetMix	OBUS	1.3970e-003	0.00
tblFleetMix	SBUS	9.3200e-004	0.00
tblFleetMix	UBUS	1.1600e-003	0.00
tblLandUse	LandUseSquareFeet	728,021.77	200,000.00

tblLandUse	LandUseSquareFeet	3,961,000.00	200,000.00
tblLandUse	LotAcreage	104.24	20.00
tblLandUse	Population	11,328.00	3,961.00
tblVehicleTrips	ST_TR	1.30	1.34
tblVehicleTrips	ST_TR	6.39	0.00
tblVehicleTrips	SU_TR	0.00	1.34
tblVehicleTrips	SU_TR	5.86	0.00
tblVehicleTrips	WD_TR	1.71	1.34
tblVehicleTrips	WD_TR	6.65	0.00
tblWoodstoves	NumberCatalytic	198.05	0.00
tblWoodstoves	NumberNoncatalytic	198.05	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	21.6459	94.1743	169.7271	0.5334	38.9536	2.3916	40.9361	10.4104	2.2003	12.2780	0.0000	53,858.5962	53,858.5962	2.8571	0.0000	53,930.0228
2020	19.7838	85.1140	155.0231	0.5208	38.9535	1.6524	40.6059	10.4104	1.5548	11.9651	0.0000	52,576.0485	52,576.0485	2.6502	0.0000	52,642.3026
2021	18.2138	76.7081	142.8586	0.5078	38.9534	1.2640	40.2173	10.4103	1.1859	11.5962	0.0000	51,290.7712	51,290.7712	2.4923	0.0000	51,353.0795
2022	44.0400	71.1679	132.9132	0.4941	38.9532	1.0935	40.0467	10.4103	1.0259	11.4362	0.0000	49,930.6112	49,930.6112	2.3496	0.0000	49,989.3522
Maximum	**44.0400**	**94.1743**	**169.7271**	**0.5334**	**38.9536**	**2.3916**	**40.9361**	**10.4104**	**2.2003**	**12.2780**	**0.0000**	**53,858.5962**	**53,858.5962**	**2.8571**	**0.0000**	**53,930.0228**

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					
2019	21.6459	94.1743	169.7271	0.5334	38.9536	2.3916	40.9361	10.4104	2.2003	12.2780	0.0000	53,858.5962	53,858.5962	2.8571	0.0000	53,930.0228
2020	19.7838	85.1140	155.0231	0.5208	38.9535	1.6524	40.6059	10.4104	1.5548	11.9651	0.0000	52,576.0485	52,576.0485	2.6502	0.0000	52,642.3026
2021	18.2138	76.7081	142.8586	0.5078	38.9534	1.2640	40.2173	10.4103	1.1859	11.5962	0.0000	51,290.7712	51,290.7712	2.4923	0.0000	51,353.0795
2022	44.0400	71.1679	132.9132	0.4941	38.9532	1.0935	40.0467	10.4103	1.0259	11.4362	0.0000	49,930.6112	49,930.6112	2.3496	0.0000	49,989.3522
Maximum	**44.0400**	**94.1743**	**169.7271**	**0.5334**	**38.9536**	**2.3916**	**40.9361**	**10.4104**	**2.2003**	**12.2780**	**0.0000**	**53,858.5962**	**53,858.5962**	**2.8571**	**0.0000**	**53,930.0228**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	18.6605	3.7771	327.6016	0.0173		1.8092	1.8092		1.8092	1.8092	0.0000	589.4054	589.4054	0.5703	0.0000	603.6625
Energy	1.8131	15.5384	6.9200	0.0989		1.2527	1.2527		1.2527	1.2527		19,779.3234	19,779.3234	0.3791	0.3626	19,896.8620
Mobile	17.4257	21.8247	153.5054	0.3065	33.4141	0.2226	33.6367	8.8764	0.2066	9.0830		30,631.7022	30,631.7022	2.2123		30,687.0107
Total	**37.8992**	**41.1402**	**488.0271**	**0.4227**	**33.4141**	**3.2845**	**36.6986**	**8.8764**	**3.2685**	**12.1448**	**0.0000**	**51,000.4310**	**51,000.4310**	**3.1617**	**0.3626**	**51,187.5352**

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	18.6605	3.7771	327.6016	0.0173		1.8092	1.8092		1.8092	1.8092	0.0000	589.4054	589.4054	0.5703	0.0000	603.6625
Energy	1.8131	15.5384	6.9200	0.0989		1.2527	1.2527		1.2527	1.2527		19,779.3234	19,779.3234	0.3791	0.3626	19,896.8620
Mobile	17.4257	21.8247	153.5054	0.3065	33.4141	0.2226	33.6367	8.8764	0.2066	9.0830		30,631.7022	30,631.7022	2.2123		30,687.0107
Total	**37.8992**	**41.1402**	**488.0271**	**0.4227**	**33.4141**	**3.2845**	**36.6986**	**8.8764**	**3.2685**	**12.1448**	**0.0000**	**51,000.4310**	**51,000.4310**	**3.1617**	**0.3626**	**51,187.5352**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2019	3/11/2019	5	50	
2	Site Preparation	Site Preparation	3/12/2019	4/22/2019	5	30	
3	Grading	Grading	4/23/2019	8/5/2019	5	75	
4	Building Construction	Building Construction	8/6/2019	6/6/2022	5	740	
5	Paving	Paving	6/7/2022	8/22/2022	5	55	
6	Architectural Coating	Architectural Coating	8/23/2022	11/7/2022	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 12.86

Residential Indoor: 405,000; Residential Outdoor: 135,000; Non-Residential Indoor: 300,000; Non-Residential Outdoor: 100,000; Striped

OffRoad Equipment

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	455.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	3,171.00	548.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	634.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.9809	0.0000	1.9809	0.2999	0.0000	0.2999			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697		3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**1.9809**	**1.7949**	**3.7758**	**0.2999**	**1.6697**	**1.9696**		**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

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	0.0511	2.3247	0.2796	7.0000e-003	0.1592	8.4000e-003	0.1676	0.0436	8.0400e-003	0.0517		742.5525	742.5525	0.0461		743.7059
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0826	0.0507	0.6664	1.7100e-003	0.1677	1.0300e-003	0.1687	0.0445	9.5000e-004	0.0454		170.6284	170.6284	4.7800e-003		170.7478
Total	**0.1337**	**2.3754**	**0.9459**	**8.7100e-003**	**0.3269**	**9.4300e-003**	**0.3363**	**0.0881**	**8.9900e-003**	**0.0971**		**913.1808**	**913.1808**	**0.0509**		**914.4536**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.8914	0.0000	0.8914	0.1350	0.0000	0.1350			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697	0.0000	3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.8914**	**1.7949**	**2.6863**	**0.1350**	**1.6697**	**1.8046**	**0.0000**	**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

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	0.0511	2.3247	0.2796	7.0000e-003	0.1592	8.4000e-003	0.1676	0.0436	8.0400e-003	0.0517		742.5525	742.5525	0.0461		743.7059
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0826	0.0507	0.6664	1.7100e-003	0.1677	1.0300e-003	0.1687	0.0445	9.5000e-004	0.0454		170.6284	170.6284	4.7800e-003		170.7478
Total	**0.1337**	**2.3754**	**0.9459**	**8.7100e-003**	**0.3269**	**9.4300e-003**	**0.3363**	**0.0881**	**8.9900e-003**	**0.0971**		**913.1808**	**913.1808**	**0.0509**		**914.4536**

3.3 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0991	0.0608	0.7997	2.0600e-003	0.2012	1.2400e-003	0.2024	0.0534	1.1400e-003	0.0545		204.7540	204.7540	5.7300e-003		204.8973
Total	**0.0991**	**0.0608**	**0.7997**	**2.0600e-003**	**0.2012**	**1.2400e-003**	**0.2024**	**0.0534**	**1.1400e-003**	**0.0545**		**204.7540**	**204.7540**	**5.7300e-003**		**204.8973**

Mitigated Construction On-Site

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

Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**8.1298**	**2.3904**	**10.5202**	**4.4688**	**2.1991**	**6.6679**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0991	0.0608	0.7997	2.0600e-003	0.2012	1.2400e-003	0.2024	0.0534	1.1400e-003	0.0545		204.7540	204.7540	5.7300e-003		204.8973
Total	**0.0991**	**0.0608**	**0.7997**	**2.0600e-003**	**0.2012**	**1.2400e-003**	**0.2024**	**0.0534**	**1.1400e-003**	**0.0545**		**204.7540**	**204.7540**	**5.7300e-003**		**204.8973**

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920		6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**8.6733**	**2.3827**	**11.0560**	**3.5965**	**2.1920**	**5.7885**		**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1101	0.0676	0.8885	2.2900e-003	0.2236	1.3800e-003	0.2249	0.0593	1.2700e-003	0.0606		227.5045	227.5045	6.3700e-003		227.6637
Total	**0.1101**	**0.0676**	**0.8885**	**2.2900e-003**	**0.2236**	**1.3800e-003**	**0.2249**	**0.0593**	**1.2700e-003**	**0.0606**		**227.5045**	**227.5045**	**6.3700e-003**		**227.6637**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920	0.0000	6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**3.9030**	**2.3827**	**6.2857**	**1.6184**	**2.1920**	**3.8105**	**0.0000**	**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

Mitigated Construction Off-Site

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

Category	lb/day											lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1101	0.0676	0.8885	2.2900e-003	0.2236	1.3800e-003	0.2249	0.0593	1.2700e-003	0.0606		227.5045	227.5045	6.3700e-003		227.6637
Total	**0.1101**	**0.0676**	**0.8885**	**2.2900e-003**	**0.2236**	**1.3800e-003**	**0.2249**	**0.0593**	**1.2700e-003**	**0.0606**		**227.5045**	**227.5045**	**6.3700e-003**		**227.6637**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.8253	62.3807	11.6900	0.1442	3.5093	0.4738	3.9832	1.0104	0.4533	1.4637		15,196.1832	15,196.1832	1.2159		15,226.5808
Worker	17.4595	10.7147	140.8733	0.3623	35.4443	0.2188	35.6631	9.4000	0.2015	9.6015		36,070.8328	36,070.8328	1.0098		36,096.0785

Total	**19.2847**	**73.0955**	**152.5633**	**0.5065**	**38.9536**	**0.6926**	**39.6463**	**10.4104**	**0.6548**	**11.0653**		**51,267.0160**	**51,267.0160**	**2.2257**		**51,322.6593**

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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.8253	62.3807	11.6900	0.1442	3.5093	0.4738	3.9832	1.0104	0.4533	1.4637		15,196.1832	15,196.1832	1.2159		15,226.5808
Worker	17.4595	10.7147	140.8733	0.3623	35.4443	0.2188	35.6631	9.4000	0.2015	9.6015		36,070.8328	36,070.8328	1.0098		36,096.0785
Total	**19.2847**	**73.0955**	**152.5633**	**0.5065**	**38.9536**	**0.6926**	**39.6463**	**10.4104**	**0.6548**	**11.0653**		**51,267.0160**	**51,267.0160**	**2.2257**		**51,322.6593**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.5274	56.3847	10.3152	0.1432	3.5092	0.3207	3.8299	1.0104	0.3068	1.3172		15,091.4226	15,091.4226	1.1319		15,119.7208
Worker	16.1366	9.5432	127.8594	0.3507	35.4443	0.2146	35.6589	9.4000	0.1976	9.5976		34,931.5628	34,931.5628	0.8954		34,953.9474
Total	**17.6640**	**65.9279**	**138.1746**	**0.4939**	**38.9535**	**0.5353**	**39.4888**	**10.4104**	**0.5044**	**10.9148**		**50,022.9854**	**50,022.9854**	**2.0273**		**50,073.6681**

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.5274	56.3847	10.3152	0.1432	3.5092	0.3207	3.8299	1.0104	0.3068	1.3172		15,091.4226	15,091.4226	1.1319		15,119.7208
Worker	16.1366	9.5432	127.8594	0.3507	35.4443	0.2146	35.6589	9.4000	0.1976	9.5976		34,931.5628	34,931.5628	0.8954		34,953.9474
Total	**17.6640**	**65.9279**	**138.1746**	**0.4939**	**38.9535**	**0.5353**	**39.4888**	**10.4104**	**0.5044**	**10.9148**		**50,022.9854**	**50,022.9854**	**2.0273**		**50,073.6681**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.2793	50.7115	9.0478	0.1420	3.5090	0.0965	3.6055	1.0103	0.0923	1.1026		14,974.1560	14,974.1560	1.0713		15,000.9374
Worker	15.0336	8.5645	117.2356	0.3389	35.4443	0.2089	35.6532	9.4000	0.1923	9.5923		33,763.2513	33,763.2513	0.8051		33,783.3778
Total	**16.3129**	**59.2760**	**126.2834**	**0.4809**	**38.9534**	**0.3053**	**39.2587**	**10.4103**	**0.2846**	**10.6949**		**48,737.4073**	**48,737.4073**	**1.8763**		**48,784.3152**

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

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

Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.2793	50.7115	9.0478	0.1420	3.5090	0.0965	3.6055	1.0103	0.0923	1.1026		14,974.1560	14,974.1560	1.0713		15,000.9374
Worker	15.0336	8.5645	117.2356	0.3389	35.4443	0.2089	35.6532	9.4000	0.1923	9.5923		33,763.2513	33,763.2513	0.8051		33,783.3778
Total	**16.3129**	**59.2760**	**126.2834**	**0.4809**	**38.9534**	**0.3053**	**39.2587**	**10.4103**	**0.2846**	**10.6949**		**48,737.4073**	**48,737.4073**	**1.8763**		**48,784.3152**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.1929	47.8448	8.4155	0.1407	3.5089	0.0811	3.5900	1.0103	0.0776	1.0878		14,846.6998	14,846.6998	1.0146		14,872.0636
Worker	14.0620	7.7075	108.1343	0.3264	35.4443	0.2034	35.6477	9.4000	0.1872	9.5872		32,529.5779	32,529.5779	0.7231		32,547.6564

Total	**15.2549**	**55.5522**	**116.5498**	**0.4672**	**38.9532**	**0.2844**	**39.2377**	**10.4103**	**0.2648**	**10.6750**		**47,376.27 77**	**47,376.277 7**	**1.7377**		**47,419.72 00**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.333 6	2,554.3336	0.6120		2,569.632 2
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.333 6**	**2,554.3336**	**0.6120**		**2,569.632 2**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.1929	47.8448	8.4155	0.1407	3.5089	0.0811	3.5900	1.0103	0.0776	1.0878		14,846.69 98	14,846.699 8	1.0146		14,872.06 36
Worker	14.0620	7.7075	108.1343	0.3264	35.4443	0.2034	35.6477	9.4000	0.1872	9.5872		32,529.57 79	32,529.577 9	0.7231		32,547.65 64
Total	**15.2549**	**55.5522**	**116.5498**	**0.4672**	**38.9532**	**0.2844**	**39.2377**	**10.4103**	**0.2648**	**10.6750**		**47,376.27 77**	**47,376.277 7**	**1.7377**		**47,419.72 00**

3.6 Paving - 2022

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0665	0.0365	0.5115	1.5400e-003	0.1677	9.6000e-004	0.1686	0.0445	8.9000e-004	0.0454		153.8769	153.8769	3.4200e-003		153.9624
Total	**0.0665**	**0.0365**	**0.5115**	**1.5400e-003**	**0.1677**	**9.6000e-004**	**0.1686**	**0.0445**	**8.9000e-004**	**0.0454**		**153.8769**	**153.8769**	**3.4200e-003**		**153.9624**

Mitigated Construction On-Site

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

Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0665	0.0365	0.5115	1.5400e-003	0.1677	9.6000e-004	0.1686	0.0445	8.9000e-004	0.0454		153.8769	153.8769	3.4200e-003		153.9624
Total	**0.0665**	**0.0365**	**0.5115**	**1.5400e-003**	**0.1677**	**9.6000e-004**	**0.1686**	**0.0445**	**8.9000e-004**	**0.0454**		**153.8769**	**153.8769**	**3.4200e-003**		**153.9624**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	41.0240					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**41.2285**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.8115	1.5410	21.6200	0.0653	7.0866	0.0407	7.1273	1.8794	0.0374	1.9168		6,503.8639	6,503.8639	0.1446		6,507.4784
Total	**2.8115**	**1.5410**	**21.6200**	**0.0653**	**7.0866**	**0.0407**	**7.1273**	**1.8794**	**0.0374**	**1.9168**		**6,503.8639**	**6,503.8639**	**0.1446**		**6,507.4784**

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	41.0240					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**41.2285**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

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

Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.8115	1.5410	21.6200	0.0653	7.0866	0.0407	7.1273	1.8794	0.0374	1.9168		6,503.8639	6,503.8639	0.1446		6,507.4784
Total	**2.8115**	**1.5410**	**21.6200**	**0.0653**	**7.0866**	**0.0407**	**7.1273**	**1.8794**	**0.0374**	**1.9168**		**6,503.8639**	**6,503.8639**	**0.1446**		**6,507.4784**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Mitigated	17.4257	21.8247	153.5054	0.3065	33.4141	0.2226	33.6367	8.8764	0.2066	9.0830		30,631.7022	30,631.7022	2.2123		30,687.0107
Unmitigated	17.4257	21.8247	153.5054	0.3065	33.4141	0.2226	33.6367	8.8764	0.2066	9.0830		30,631.7022	30,631.7022	2.2123		30,687.0107

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unenclosed Parking Structure	0.00	0.00	0.00		
University/College (4Yr)	5,307.74	5,307.74	5307.74	15,943,854	15,943,854
Apartments Mid Rise	0.00	0.00	0.00		
Total	5,307.74	5,307.74	5,307.74	15,943,854	15,943,854

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unenclosed Parking Structure	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
University/College (4Yr)	16.60	8.40	6.90	6.40	88.60	5.00	91	9	0
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unenclosed Parking Structure	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
University/College (4Yr)	0.806500	0.053800	0.053800	0.010000	0.010000	0.010000	0.010000	0.010000	0.000000	0.000000	0.035900	0.000000	0.000000
Apartments Mid Rise	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

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	1.8131	15.5384	6.9200	0.0989		1.2527	1.2527		1.2527	1.2527		19,779.3234	19,779.3234	0.3791	0.3626	19,896.8620
NaturalGas Unmitigated	1.8131	15.5384	6.9200	0.0989		1.2527	1.2527		1.2527	1.2527		19,779.3234	19,779.3234	0.3791	0.3626	19,896.8620

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	160546	1.7314	14.7954	6.2959	0.0944		1.1962	1.1962		1.1962	1.1962		18,887.7843	18,887.7843	0.3620	0.3463	19,000.0250
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
University/College (4Yr)	7578.08	0.0817	0.7430	0.6241	4.4600e-003		0.0565	0.0565		0.0565	0.0565		891.5391	891.5391	0.0171	0.0163	896.8371
Total		**1.8131**	**15.5384**	**6.9200**	**0.0989**		**1.2527**	**1.2527**		**1.2527**	**1.2527**		**19,779.3234**	**19,779.3234**	**0.3791**	**0.3626**	**19,896.8620**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	160.546	1.7314	14.7954	6.2959	0.0944		1.1962	1.1962		1.1962	1.1962		18,887.7843	18,887.7843	0.3620	0.3463	19,000.0250
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
University/College (4Yr)	7.57808	0.0817	0.7430	0.6241	4.4600e-003		0.0565	0.0565		0.0565	0.0565		891.5391	891.5391	0.0171	0.0163	896.8371
Total		**1.8131**	**15.5384**	**6.9200**	**0.0989**		**1.2527**	**1.2527**		**1.2527**	**1.2527**		**19,779.3234**	**19,779.3234**	**0.3791**	**0.3626**	**19,896.8620**

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	18.6605	3.7771	327.6016	0.0173		1.8092	1.8092		1.8092	1.8092	0.0000	589.4054	589.4054	0.5703	0.0000	603.6625
Unmitigated	18.6605	3.7771	327.6016	0.0173		1.8092	1.8092		1.8092	1.8092	0.0000	589.4054	589.4054	0.5703	0.0000	603.6625

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	0.6182					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.1184					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.9240	3.7771	327.6016	0.0173		1.8092	1.8092		1.8092	1.8092		589.4054	589.4054	0.5703		603.6625
Total	**18.6605**	**3.7771**	**327.6016**	**0.0173**		**1.8092**	**1.8092**		**1.8092**	**1.8092**	**0.0000**	**589.4054**	**589.4054**	**0.5703**	**0.0000**	**603.6625**

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	0.6182					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.1184					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.9240	3.7771	327.6016	0.0173		1.8092	1.8092		1.8092	1.8092		589.4054	589.4054	0.5703		603.6625
Total	**18.6605**	**3.7771**	**327.6016**	**0.0173**		**1.8092**	**1.8092**		**1.8092**	**1.8092**	**0.0000**	**589.4054**	**589.4054**	**0.5703**	**0.0000**	**603.6625**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

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

CBU Specific Plan Amendment No. 1 - Riverside-South Coast County, Winter

CBU Specific Plan Amendment No. 1

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
University/College (4Yr)	3,961.00	Student	16.71	200,000.00	0
Unenclosed Parking Structure	560.00	1000sqft	12.86	560,000.00	0
Apartments Mid Rise	3,961.00	Dwelling Unit	20.00	200,000.00	3961

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - CBU anticipates that 3,961 beds would be needed to reach the proposed bed-to-student ratio and anticipates providing an additional 400,000 square feet of building area for academic purposes

Demolition - Estimated building size to demolish to characterize general remodeling.

Architectural Coating - Assume all architectural coatings comply with SCAQMD Rule 1113.

Vehicle Trips - Traffic study shows total ADT of 5,291 new trips, divided by 3,961 new students to get 1.34 trip rate, applied to all days. Apartment landuse for dorms, all trips covered by University

Area Coating - Assume all architectural coatings comply with SCAQMD Rule 1113.

Construction Off-road Equipment Mitigation - Dust control measures as required by SCAQMD Rule 403.

Fleet Mix - Changed to a representative university fleet mix.

Woodstoves - The residences are student dorms without fireplaces.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	3,366.85	0.00
tblFireplaces	NumberNoFireplace	396.10	3,961.00
tblFireplaces	NumberWood	198.05	0.00
tblFleetMix	HHD	0.07	0.01
tblFleetMix	LDA	0.55	0.81
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT2	0.19	0.05
tblFleetMix	LHD1	0.02	0.01
tblFleetMix	LHD2	4.9700e-003	0.01
tblFleetMix	MCY	4.5470e-003	0.04
tblFleetMix	MDV	0.12	0.01
tblFleetMix	MH	9.6500e-004	0.00
tblFleetMix	MHD	0.02	0.01
tblFleetMix	OBUS	1.3970e-003	0.00
tblFleetMix	SBUS	9.3200e-004	0.00
tblFleetMix	UBUS	1.1600e-003	0.00
tblLandUse	LandUseSquareFeet	728,021.77	200,000.00

tblLandUse	LandUseSquareFeet	3,961,000.00	200,000.00
tblLandUse	LotAcreage	104.24	20.00
tblLandUse	Population	11,328.00	3,961.00
tblVehicleTrips	ST_TR	1.30	1.34
tblVehicleTrips	ST_TR	6.39	0.00
tblVehicleTrips	SU_TR	0.00	1.34
tblVehicleTrips	SU_TR	5.86	0.00
tblVehicleTrips	WD_TR	1.71	1.34
tblVehicleTrips	WD_TR	6.65	0.00
tblWoodstoves	NumberCatalytic	198.05	0.00
tblWoodstoves	NumberNoncatalytic	198.05	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	21.3365	94.4093	144.9289	0.4906	38.9536	2.3916	40.9420	10.4104	2.2003	12.2836	0.0000	49,580.4164	49,580.4164	2.8602	0.0000	49,651.9208
2020	19.5336	85.1479	132.3560	0.4792	38.9535	1.6562	40.6097	10.4104	1.5584	11.9688	0.0000	48,414.3635	48,414.3635	2.6608	0.0000	48,480.8832
2021	18.0129	76.5641	121.9103	0.4674	38.9534	1.2669	40.2202	10.4103	1.1886	11.5989	0.0000	47,253.4838	47,253.4838	2.5096	0.0000	47,316.2233
2022	43.9957	70.9491	113.5075	0.4551	38.9532	1.0961	40.0493	10.4103	1.0284	11.4387	0.0000	46,023.3868	46,023.3868	2.3730	0.0000	46,082.7109
Maximum	**43.9957**	**94.4093**	**144.9289**	**0.4906**	**38.9536**	**2.3916**	**40.9420**	**10.4104**	**2.2003**	**12.2836**	**0.0000**	**49,580.4164**	**49,580.4164**	**2.8602**	**0.0000**	**49,651.9208**

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					
2019	21.3365	94.4093	144.9289	0.4906	38.9536	2.3916	40.9420	10.4104	2.2003	12.2836	0.0000	49,580.4164	49,580.4164	2.8602	0.0000	49,651.9208
2020	19.5336	85.1479	132.3560	0.4792	38.9535	1.6562	40.6097	10.4104	1.5584	11.9688	0.0000	48,414.3635	48,414.3635	2.6608	0.0000	48,480.8832
2021	18.0129	76.5641	121.9103	0.4674	38.9534	1.2669	40.2202	10.4103	1.1886	11.5989	0.0000	47,253.4838	47,253.4838	2.5096	0.0000	47,316.2232
2022	43.9957	70.9491	113.5075	0.4551	38.9532	1.0961	40.0493	10.4103	1.0284	11.4387	0.0000	46,023.3868	46,023.3868	2.3730	0.0000	46,082.7109
Maximum	**43.9957**	**94.4093**	**144.9289**	**0.4906**	**38.9536**	**2.3916**	**40.9420**	**10.4104**	**2.2003**	**12.2836**	**0.0000**	**49,580.4164**	**49,580.4164**	**2.8602**	**0.0000**	**49,651.9208**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	18.6605	3.7771	327.6016	0.0173		1.8092	1.8092		1.8092	1.8092	0.0000	589.4054	589.4054	0.5703	0.0000	603.6625
Energy	1.8131	15.5384	6.9200	0.0989		1.2527	1.2527		1.2527	1.2527		19,779.3234	19,779.3234	0.3791	0.3626	19,896.8620
Mobile	14.9319	22.5874	136.4350	0.2792	33.4141	0.2231	33.6372	8.8764	0.2071	9.0834		27,916.6917	27,916.6917	2.1925		27,971.5037
Total	**35.4055**	**41.9029**	**470.9567**	**0.3954**	**33.4141**	**3.2850**	**36.6991**	**8.8764**	**3.2690**	**12.1453**	**0.0000**	**48,285.4205**	**48,285.4205**	**3.1419**	**0.3626**	**48,472.0282**

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	18.6605	3.7771	327.6016	0.0173		1.8092	1.8092		1.8092	1.8092	0.0000	589.4054	589.4054	0.5703	0.0000	603.6625
Energy	1.8131	15.5384	6.9200	0.0989		1.2527	1.2527		1.2527	1.2527		19,779.3234	19,779.3234	0.3791	0.3626	19,896.8620
Mobile	14.9319	22.5874	136.4350	0.2792	33.4141	0.2231	33.6372	8.8764	0.2071	9.0834		27,916.6917	27,916.6917	2.1925		27,971.5037
Total	**35.4055**	**41.9029**	**470.9567**	**0.3954**	**33.4141**	**3.2850**	**36.6991**	**8.8764**	**3.2690**	**12.1453**	**0.0000**	**48,285.4205**	**48,285.4205**	**3.1419**	**0.3626**	**48,472.0282**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2019	3/11/2019	5	50	
2	Site Preparation	Site Preparation	3/12/2019	4/22/2019	5	30	
3	Grading	Grading	4/23/2019	8/5/2019	5	75	
4	Building Construction	Building Construction	8/6/2019	6/6/2022	5	740	
5	Paving	Paving	6/7/2022	8/22/2022	5	55	
6	Architectural Coating	Architectural Coating	8/23/2022	11/7/2022	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 12.86

Residential Indoor: 405,000; Residential Outdoor: 135,000; Non-Residential Indoor: 300,000; Non-Residential Outdoor: 100,000; Striped

OffRoad Equipment

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	455.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	3,171.00	548.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	634.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.9809	0.0000	1.9809	0.2999	0.0000	0.2999			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697		3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**1.9809**	**1.7949**	**3.7758**	**0.2999**	**1.6697**	**1.9696**		**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

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	0.0538	2.3481	0.3287	6.8300e-003	0.1592	8.5500e-003	0.1678	0.0436	8.1800e-003	0.0518		724.1381	724.1381	0.0505		725.4010
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0807	0.0525	0.5401	1.5400e-003	0.1677	1.0300e-003	0.1687	0.0445	9.5000e-004	0.0454		153.0776	153.0776	4.1500e-003		153.1814
Total	**0.1345**	**2.4006**	**0.8687**	**8.3700e-003**	**0.3269**	**9.5800e-003**	**0.3365**	**0.0881**	**9.1300e-003**	**0.0973**		**877.2157**	**877.2157**	**0.0547**		**878.5824**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.8914	0.0000	0.8914	0.1350	0.0000	0.1350			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697	0.0000	3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.8914**	**1.7949**	**2.6863**	**0.1350**	**1.6697**	**1.8046**	**0.0000**	**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

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	0.0538	2.3481	0.3287	6.8300e-003	0.1592	8.5500e-003	0.1678	0.0436	8.1800e-003	0.0518		724.1381	724.1381	0.0505		725.4010
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0807	0.0525	0.5401	1.5400e-003	0.1677	1.0300e-003	0.1687	0.0445	9.5000e-004	0.0454		153.0776	153.0776	4.1500e-003		153.1814
Total	**0.1345**	**2.4006**	**0.8687**	**8.3700e-003**	**0.3269**	**9.5800e-003**	**0.3365**	**0.0881**	**9.1300e-003**	**0.0973**		**877.2157**	**877.2157**	**0.0547**		**878.5824**

3.3 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0968	0.0630	0.6481	1.8400e-003	0.2012	1.2400e-003	0.2024	0.0534	1.1400e-003	0.0545		183.6931	183.6931	4.9800e-003		183.8177
Total	**0.0968**	**0.0630**	**0.6481**	**1.8400e-003**	**0.2012**	**1.2400e-003**	**0.2024**	**0.0534**	**1.1400e-003**	**0.0545**		**183.6931**	**183.6931**	**4.9800e-003**		**183.8177**

Mitigated Construction On-Site

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

Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**8.1298**	**2.3904**	**10.5202**	**4.4688**	**2.1991**	**6.6679**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0968	0.0630	0.6481	1.8400e-003	0.2012	1.2400e-003	0.2024	0.0534	1.1400e-003	0.0545		183.6931	183.6931	4.9800e-003		183.8177
Total	**0.0968**	**0.0630**	**0.6481**	**1.8400e-003**	**0.2012**	**1.2400e-003**	**0.2024**	**0.0534**	**1.1400e-003**	**0.0545**		**183.6931**	**183.6931**	**4.9800e-003**		**183.8177**

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920		6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**8.6733**	**2.3827**	**11.0560**	**3.5965**	**2.1920**	**5.7885**		**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1076	0.0700	0.7201	2.0500e-003	0.2236	1.3800e-003	0.2249	0.0593	1.2700e-003	0.0606		204.1034	204.1034	5.5400e-003		204.2419
Total	**0.1076**	**0.0700**	**0.7201**	**2.0500e-003**	**0.2236**	**1.3800e-003**	**0.2249**	**0.0593**	**1.2700e-003**	**0.0606**		**204.1034**	**204.1034**	**5.5400e-003**		**204.2419**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920	0.0000	6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**3.9030**	**2.3827**	**6.2857**	**1.6184**	**2.1920**	**3.8105**	**0.0000**	**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

Mitigated Construction Off-Site

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

Category	lb/day											lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1076	0.0700	0.7201	2.0500e-003	0.2236	1.3800e-003	0.2249	0.0593	1.2700e-003	0.0606		204.1034	204.1034	5.5400e-003		204.2419
Total	**0.1076**	**0.0700**	**0.7201**	**2.0500e-003**	**0.2236**	**1.3800e-003**	**0.2249**	**0.0593**	**1.2700e-003**	**0.0606**		**204.1034**	**204.1034**	**5.5400e-003**		**204.2419**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.9160	62.2387	13.5917	0.1388	3.5093	0.4797	3.9891	1.0104	0.4589	1.4694		14,628.2373	14,628.2373	1.3508		14,662.0063
Worker	17.0594	11.0918	114.1735	0.3249	35.4443	0.2188	35.6631	9.4000	0.2015	9.6015		32,360.5989	32,360.5989	0.8781		32,382.5510

Total	**18.9753**	**73.3305**	**127.7652**	**0.4637**	**38.9536**	**0.6985**	**39.6522**	**10.4104**	**0.6605**	**11.0709**		**46,988.8362**	**46,988.8362**	**2.2288**		**47,044.5573**

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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.9160	62.2387	13.5917	0.1388	3.5093	0.4797	3.9891	1.0104	0.4589	1.4694		14,628.2373	14,628.2373	1.3508		14,662.0063
Worker	17.0594	11.0918	114.1735	0.3249	35.4443	0.2188	35.6631	9.4000	0.2015	9.6015		32,360.5989	32,360.5989	0.8781		32,382.5510
Total	**18.9753**	**73.3305**	**127.7652**	**0.4637**	**38.9536**	**0.6985**	**39.6522**	**10.4104**	**0.6605**	**11.0709**		**46,988.8362**	**46,988.8362**	**2.2288**		**47,044.5573**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.6111	56.0894	12.0779	0.1378	3.5092	0.3245	3.8337	1.0104	0.3104	1.3208		14,524.3434	14,524.3434	1.2596		14,555.8331
Worker	15.8027	9.8725	103.4296	0.3145	35.4443	0.2146	35.6589	9.4000	0.1976	9.5976		31,336.9571	31,336.9571	0.7783		31,356.4157
Total	**17.4138**	**65.9619**	**115.5075**	**0.4523**	**38.9535**	**0.5391**	**39.4926**	**10.4104**	**0.5081**	**10.9184**		**45,861.3004**	**45,861.3004**	**2.0379**		**45,912.2487**

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.6111	56.0894	12.0779	0.1378	3.5092	0.3245	3.8337	1.0104	0.3104	1.3208		14,524.3434	14,524.3434	1.2596		14,555.8331
Worker	15.8027	9.8725	103.4296	0.3145	35.4443	0.2146	35.6589	9.4000	0.1976	9.5976		31,336.9571	31,336.9571	0.7783		31,356.4157
Total	**17.4138**	**65.9619**	**115.5075**	**0.4523**	**38.9535**	**0.5391**	**39.4926**	**10.4104**	**0.5081**	**10.9184**		**45,861.3004**	**45,861.3004**	**2.0379**		**45,912.2487**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.3587	50.2748	10.7030	0.1367	3.5090	0.0994	3.6084	1.0103	0.0950	1.1053		14,410.9324	14,410.9324	1.1936		14,440.7735
Worker	14.7532	8.8572	94.6321	0.3039	35.4443	0.2089	35.6532	9.4000	0.1923	9.5923		30,289.1875	30,289.1875	0.6999		30,306.6855
Total	**16.1120**	**59.1320**	**105.3351**	**0.4405**	**38.9534**	**0.3082**	**39.2616**	**10.4103**	**0.2873**	**10.6977**		**44,700.1199**	**44,700.1199**	**1.8936**		**44,747.4590**

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

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

Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.3587	50.2748	10.7030	0.1367	3.5090	0.0994	3.6084	1.0103	0.0950	1.1053		14,410.9324	14,410.9324	1.1936		14,440.7735
Worker	14.7532	8.8572	94.6321	0.3039	35.4443	0.2089	35.6532	9.4000	0.1923	9.5923		30,289.1875	30,289.1875	0.6999		30,306.6855
Total	**16.1120**	**59.1320**	**105.3351**	**0.4405**	**38.9534**	**0.3082**	**39.2616**	**10.4103**	**0.2873**	**10.6977**		**44,700.1199**	**44,700.1199**	**1.8936**		**44,747.4590**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.2687	47.3656	9.9911	0.1354	3.5089	0.0837	3.5926	1.0103	0.0801	1.0903		14,285.1071	14,285.1071	1.1316		14,313.3976
Worker	13.8405	7.9678	87.1530	0.2927	35.4443	0.2034	35.6477	9.4000	0.1872	9.5872		29,183.9461	29,183.9461	0.6294		29,199.6810

Total	**15.1092**	**55.3334**	**97.1441**	**0.4281**	**38.9532**	**0.2871**	**39.2403**	**10.4103**	**0.2673**	**10.6775**		**43,469.0532**	**43,469.0532**	**1.7610**		**43,513.0786**

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.2687	47.3656	9.9911	0.1354	3.5089	0.0837	3.5926	1.0103	0.0801	1.0903		14,285.1071	14,285.1071	1.1316		14,313.3976
Worker	13.8405	7.9678	87.1530	0.2927	35.4443	0.2034	35.6477	9.4000	0.1872	9.5872		29,183.9461	29,183.9461	0.6294		29,199.6810
Total	**15.1092**	**55.3334**	**97.1441**	**0.4281**	**38.9532**	**0.2871**	**39.2403**	**10.4103**	**0.2673**	**10.6775**		**43,469.0532**	**43,469.0532**	**1.7610**		**43,513.0786**

3.6 Paving - 2022

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0655	0.0377	0.4123	1.3800e-003	0.1677	9.6000e-004	0.1686	0.0445	8.9000e-004	0.0454		138.0508	138.0508	2.9800e-003		138.1253
Total	**0.0655**	**0.0377**	**0.4123**	**1.3800e-003**	**0.1677**	**9.6000e-004**	**0.1686**	**0.0445**	**8.9000e-004**	**0.0454**		**138.0508**	**138.0508**	**2.9800e-003**		**138.1253**

Mitigated Construction On-Site

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

Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0655	0.0377	0.4123	1.3800e-003	0.1677	9.6000e-004	0.1686	0.0445	8.9000e-004	0.0454		138.0508	138.0508	2.9800e-003		138.1253
Total	**0.0655**	**0.0377**	**0.4123**	**1.3800e-003**	**0.1677**	**9.6000e-004**	**0.1686**	**0.0445**	**8.9000e-004**	**0.0454**		**138.0508**	**138.0508**	**2.9800e-003**		**138.1253**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	41.0240					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**41.2285**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.7672	1.5931	17.4251	0.0585	7.0866	0.0407	7.1273	1.8794	0.0374	1.9168		5,834.9486	5,834.9486	0.1258		5,838.0945
Total	**2.7672**	**1.5931**	**17.4251**	**0.0585**	**7.0866**	**0.0407**	**7.1273**	**1.8794**	**0.0374**	**1.9168**		**5,834.9486**	**5,834.9486**	**0.1258**		**5,838.0945**

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	41.0240					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**41.2285**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

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

Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.7672	1.5931	17.4251	0.0585	7.0866	0.0407	7.1273	1.8794	0.0374	1.9168		5,834.9486	5,834.9486	0.1258		5,838.0945
Total	**2.7672**	**1.5931**	**17.4251**	**0.0585**	**7.0866**	**0.0407**	**7.1273**	**1.8794**	**0.0374**	**1.9168**		**5,834.9486**	**5,834.9486**	**0.1258**		**5,838.0945**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Mitigated	14.9319	22.5874	136.4350	0.2792	33.4141	0.2231	33.6372	8.8764	0.2071	9.0834		27,916.6917	27,916.6917	2.1925		27,971.5037
Unmitigated	14.9319	22.5874	136.4350	0.2792	33.4141	0.2231	33.6372	8.8764	0.2071	9.0834		27,916.6917	27,916.6917	2.1925		27,971.5037

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unenclosed Parking Structure	0.00	0.00	0.00		
University/College (4Yr)	5,307.74	5,307.74	5307.74	15,943,854	15,943,854
Apartments Mid Rise	0.00	0.00	0.00		
Total	5,307.74	5,307.74	5,307.74	15,943,854	15,943,854

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unenclosed Parking Structure	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
University/College (4Yr)	16.60	8.40	6.90	6.40	88.60	5.00	91	9	0
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unenclosed Parking Structure	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
University/College (4Yr)	0.806500	0.053800	0.053800	0.010000	0.010000	0.010000	0.010000	0.010000	0.000000	0.000000	0.035900	0.000000	0.000000
Apartments Mid Rise	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

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	1.8131	15.5384	6.9200	0.0989		1.2527	1.2527		1.2527	1.2527		19,779.3234	19,779.3234	0.3791	0.3626	19,896.8620
NaturalGas Unmitigated	1.8131	15.5384	6.9200	0.0989		1.2527	1.2527		1.2527	1.2527		19,779.3234	19,779.3234	0.3791	0.3626	19,896.8620

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	160546	1.7314	14.7954	6.2959	0.0944		1.1962	1.1962		1.1962	1.1962		18,887.7843	18,887.7843	0.3620	0.3463	19,000.0250
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
University/College (4Yr)	7578.08	0.0817	0.7430	0.6241	4.4600e-003		0.0565	0.0565		0.0565	0.0565		891.5391	891.5391	0.0171	0.0163	896.8371
Total		**1.8131**	**15.5384**	**6.9200**	**0.0989**		**1.2527**	**1.2527**		**1.2527**	**1.2527**		**19,779.3234**	**19,779.3234**	**0.3791**	**0.3626**	**19,896.8620**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	160.546	1.7314	14.7954	6.2959	0.0944		1.1962	1.1962		1.1962	1.1962		18,887.7843	18,887.7843	0.3620	0.3463	19,000.0250
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
University/College (4Yr)	7.57808	0.0817	0.7430	0.6241	4.4600e-003		0.0565	0.0565		0.0565	0.0565		891.5391	891.5391	0.0171	0.0163	896.8371
Total		**1.8131**	**15.5384**	**6.9200**	**0.0989**		**1.2527**	**1.2527**		**1.2527**	**1.2527**		**19,779.3234**	**19,779.3234**	**0.3791**	**0.3626**	**19,896.8620**

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	18.6605	3.7771	327.6016	0.0173		1.8092	1.8092		1.8092	1.8092	0.0000	589.4054	589.4054	0.5703	0.0000	603.6625
Unmitigated	18.6605	3.7771	327.6016	0.0173		1.8092	1.8092		1.8092	1.8092	0.0000	589.4054	589.4054	0.5703	0.0000	603.6625

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	0.6182					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.1184					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.9240	3.7771	327.6016	0.0173		1.8092	1.8092		1.8092	1.8092		589.4054	589.4054	0.5703		603.6625
Total	**18.6605**	**3.7771**	**327.6016**	**0.0173**		**1.8092**	**1.8092**		**1.8092**	**1.8092**	**0.0000**	**589.4054**	**589.4054**	**0.5703**	**0.0000**	**603.6625**

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	0.6182					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.1184					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.9240	3.7771	327.6016	0.0173		1.8092	1.8092		1.8092	1.8092		589.4054	589.4054	0.5703		603.6625
Total	**18.6605**	**3.7771**	**327.6016**	**0.0173**		**1.8092**	**1.8092**		**1.8092**	**1.8092**	**0.0000**	**589.4054**	**589.4054**	**0.5703**	**0.0000**	**603.6625**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

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