APPENDIX C
Air Quality Technical Appendix

C-1 Air Quality Technical Appendix

6220 WEST YUCCA MIXED USE PROJECT

Air Quality Technical Appendix

Prepared for
Champion Real Estate Company

April 2020

ESA

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233 Wilshire Boulevard
Suite 150
Santa Monica, CA 90401
310.451.4488
esassoc.com

Irvine
Los Angeles
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Acronyms and Abbreviations

Acronym	Description
AQMP	Air Quality Management Plan
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CEUS	Commercial End-Use Survey
City	City of Los Angeles
CO	carbon monoxide
CCR	California Code of Regulations
DPM	diesel particulate matter
EIR	Environmental Impact Report
EMFAC	on-road vehicle emissions factor model
hp	horsepower
HQTA	high-quality transit area
HRA	health risk assessment
LEED	Leadership in Energy and Environmental Design
LST	localized significance threshold
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NOP	Notice of Preparation
OEHHA	Office of Environmental Health Hazard Assessment
OFFROAD	off-road emissions factor model
PDF	Project Design Feature
PM2.5	fine particulate matter
PM10	respirable particulate matter
RASS	Residential Appliance Saturation Survey
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_2	sulfur dioxide
TAC	toxic air contaminant
TPA	transit priority area
USEPA	United States Environmental Protection Agency
USGBC	United States Green Building Council
VMT	vehicle miles traveled
VOC	volatile organic compounds

6220 WEST YUCCA MIXED USE PROJECT
Air Pollutant Emissions Methodology

1. Introduction

ESA conducted a comprehensive air pollutant emissions analysis for the 6220 West Yucca Mixed Use Project (Project). Emissions associated with construction and operation of the Project were quantified. This Technical Appendix describes the methodology used to estimate air pollutant emissions from the Project. The project design features (PDFs) that would be incorporated into the Project's design are also described below, as well as mitigation measures required under the California Environmental Quality Act (CEQA). Detailed modeling calculations and supporting files are provided in **Exhibits A** through **D** of this Technical Appendix.

2. Methodology

This section describes the methodology used to calculate emissions resulting from Project construction and operational activities and to evaluate air quality impacts. The criteria pollutant emissions evaluated include volatile organic compounds (VOCs), nitrogen oxides (NO_X), carbon monoxide (CO), sulfur dioxide (SO_2), respirable particulate matter (PM10), and fine particulate matter (PM2.5). Construction activities would generate emissions from equipment usage, truck hauling and area source emissions. Long-term operational activities would generate emissions through vehicle trips, energy usage, and area source emissions such as landscaping equipment and evaporative emissions from consumer product usage.

2.1 Project Construction Emissions

Construction of the Project has the potential to generate air pollutant emissions through the use of heavy-duty construction equipment, such as excavators and forklifts, and through vehicle trips generated from workers and haul trucks traveling to and from the Project Site, and through building activities, such as the application of paint and other surface coatings. In addition, fugitive dust emissions would result from various soil-handling activities. Mobile source emissions, primarily NO_X, would result from the use of construction equipment such as dozers and loaders. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of construction activity, and prevailing weather conditions.

Construction air quality impacts were assessed based on the incremental increase in emissions compared to baseline conditions. Under CEQA, the baseline environmental setting for an Environmental Impact Report (EIR) is generally established at or around the time that the Notice of Preparation (NOP) for the EIR is published. The Project Site is currently developed with one single-family residence, one duplex, one studio apartment, and three, two-story apartment

buildings (43 existing multi-family/apartment units total) and associated carports and paved surface parking areas, for a total of 44 dwelling units. These existing uses would be demolished and removed to allow for development of the Project. Nonetheless, the Project's construction emissions do not take credit for the removal of the existing emissions associated with the existing uses on the Project Site. Localized air quality impacts are also evaluated based on the Project's emissions without netting of existing Project Site emissions.

Project construction activities that would have the potential to create regional air quality impacts include vehicle trips generated by construction workers, vendor trucks, and haul trucks traveling to and from the Project Site demolition, soil handling activities such as excavation and grading, and building activities such as the application of paint and other surface coatings. The Project's daily regional criteria pollutant emissions during construction have been estimated by assuming a conservative scenario for construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile source and fugitive dust emissions factors. The emissions have been estimated using the CalEEMod software, which is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions from a variety of land use projects. CalEEMod was developed in collaboration with the air districts of California. Regional data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) were provided by the various California air districts to account for local requirements and conditions. The model is considered to be an accurate and comprehensive tool for quantifying the air quality and GHG impacts of land use projects throughout California and is an emissions inventory software program recommended by the SCAQMD.[1] The input values used in this analysis were adjusted to be Project-specific based on equipment types and the construction schedule. Haul truck trip estimates were based on excavation volumes obtained from the contractor and 10 cubic yards debris-capacity haul trucks, 14 cubic yards soil capacity haul trucks; worker trip estimates were provided by the contractor; and vendor truck trip estimates were based on calculation methodologies in CalEEMod. CalEEMod is based on outputs from the CARB off-road emissions factor (OFFROAD) and on-road emissions factor (EMFAC) models, which are emissions estimation models developed by CARB and used to calculate emissions from construction activities, including on- and off-road vehicles.[2] These values were applied to the construction phasing assumptions used in the criteria pollutant analysis to generate criteria pollutant emissions values for each construction activity. Construction phasing would include demolition of the existing buildings and associated parking, site clearing, grading, excavation, and subterranean parking and building construction. The Project would export approximately 120,000 cubic yards of soil and generate approximately 5,000 cubic yards of demolition debris (asphalt, interior and exterior building demolition, and general construction debris). Vendor trucks would be used to deliver building foundation materials to the Project Site. Emissions from

1 California Emissions Estimator Model. California Emissions Estimator Model (CalEEMod) Website. Available at: http://www.caleemod.com. Accessed August 2019.

2 California Air Resources Board, CalEEMod User's Guide, p. 35, 41, September 2016, https://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/01_user-39-s-guide2016-3-1.pdf?sfvrsn=2. Accessed August 2019.

these on-road heavy-duty truck activities were estimated by construction phase using the CARB EMFAC2017 model.

Detailed Project construction phasing, equipment list, and emissions calculations are provided in **Exhibit A** of this Technical Appendix. Project construction was modeled to start in 2018, but will commence at a later date. As such, construction impacts would be less than those analyzed due to the use of a more energy-efficient and cleaner burning construction vehicle fleet mix, pursuant to state regulations that require vehicle fleet operators to phase-in less polluting heavy-duty equipment. As a result, Project-related construction air quality impacts would be lower than the impacts disclosed in the Project's Draft EIR. For emissions modeling purposes, conservatively analyzing the emissions using an earlier construction start date (i.e., 2018), provides for a worst-case analysis and full disclosure of potential air quality impacts, as required by CEQA.

2.1.1 Emissions from Construction Equipment

Mobile source emissions, primarily NO_X and particulate matter, would result from the use of construction equipment such as bulldozers, wheeled loaders, and cranes. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation and, for dust, the prevailing weather conditions. The assessment of construction air quality impacts considers each of these potential sources.

Construction equipment emissions will vary with engine model years in which newer equipment will emit fewer pollutants. The CalEEMod model uses an emission rate for equipment, which represents an average model year for available equipment unless the specific emissions standards are applied to the equipment. The proposed Project would incorporate into the Project design the use of standardized and environmentally protective construction equipment consistent with state regulations (Title 13 California Code of Regulations [CCR] Section 2449) and SCAQMD Air Quality Management Plan (AQMP) control strategies to control emissions (refer to the discussion of PDFs discussed below). CalEEMod calculates the exhaust emissions based on the CARB OFFROAD methodology using the equation presented below.

Construction Off-Road Equipment:

$$Emissions_{Diesel}\,[g] = \sum_i (EF_i \times Pop_i \times AvgHP_i \times Load_i \times Activity_i$$

Where:

EF_i	=	Emission factor from OFFROAD [g/bhp-hr]
Pop_i	=	Population [quantity of same equipment type]
$AvgHP_i$	=	Maximum rated average horsepower [hp]
$Load_i$	=	Load Factor [dimensionless]
$Activity_i$	=	Hours of operation [hours]
i	=	Summation index

The CalEEMod software provides options for specifying equipment, horsepower ratings, load factors, and operational hours per day. Construction equipment lists for each phase of activity were provided by the applicant and/or applicant's construction contractor(s) and architect(s). The amount of construction equipment used and the duration of construction activity could have a

substantial effect upon the amount of construction emissions, concentrations and the resulting impacts occurring at any one time. As such, the emission forecasts provided reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner. Fugitive dust emissions during construction activities were estimated in CalEEMod, which are based on the methods described in the United States Environmental Protection Agency (USEPA) AP-42 Compilation of Air Pollutant Emission Factors.[3]

2.1.2 Emissions from On-Road Trips

Construction generates on-road vehicle exhaust, evaporative, and dust emissions from personal vehicles for worker and vendor commuting, and trucks for soil and material hauling. These emissions are based on the number of trips and vehicle miles traveled (VMT) along with emission factors from EMFAC.

Emissions for all pollutants and particulate matter emissions from tire and brake wear were divided by the VMT of each respective vehicle class from each scenario year and adjusted for unit conversions to derive emission factors in units of grams per VMT. The emissions from mobile sources were calculated with the trip rates, trip lengths and emission factors from EMFAC as follows:

Construction On-Road Trips:

$$Emissions_{pollutant} = VMT \times EF_{pollutant}$$

Where: $Emissions_{pollutant}$ = emissions from vehicles for each pollutant [g]
VMT = vehicle miles traveled [miles]
$EF_{pollutant}$ = emission factor for each pollutant [g/mile]

2.1.3 Emissions from Architectural Coating

Volatile organic compound (VOC) off-gassing emissions result from evaporation of solvents contained in surface coatings. The CalEEMod software calculates the VOC evaporative emissions from application of residential and non-residential surface coatings using the following equation:

Construction Architectural Coating Emissions:

$$E_{AC} = EF_{AC} \times F \times A_{paint}$$

Where: E = emissions [lb VOC]
EF = emission factor [lb/sqft]
A = building surface area [sqft].

The CalEEMod software assumes the total surface for painting equals 2.7 times the floor square footage for residential and 2 times that for nonresidential square footage defined by the user. All

[3] United States Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emissions Factors, Chapter 13: Miscellaneous Sources, https://www3.epa.gov/ttn/chief/ap42/ch13/index.html. Accessed August 2019.

of the land use information provided by a metric other than square footage will be converted to square footage using the default conversions or user defined equivalence.

F = fraction of surface area [%].

The default values based on SCAQMD methods used in their coating rules are 75 percent for the interior surfaces and 25 percent for the exterior shell. Parking areas are based on 6 percent coverage.

The emission factor (EF) is based on the VOC content of the surface coatings and is calculated estimated using the equation below:

Construction Surface Coating Emission Factor:

$EF_{AC} = C_{voc} / 454[g/lb] \times 3.785[L/Gal]/180[sqft]$

Where: EF = emission factor [lb/sqft]
C = VOC content [g/L]. This varies by location and year

The emission factors for coating categories are calculated using the equation above based on default VOC content provided by the air districts or CARB's statewide limits.

2.1.4 Emissions from Paving

While there is no specific screen associated with asphalt paving emissions, CalEEMod estimates VOC off-gassing emissions associated with asphalt paving of parking lots using the following equation:

Construction Paving Emissions:

$E_{AP} = EF_{AP} \times A_{Parking}$

Where: E = emissions [lb]
EF = emission factor [lb/acre]. The SMAQMD default emission factor is 2.62 lb/acre.
$A_{Parking}$ = area of the parking lot [acre]

2.2 Project Operational Emissions

The Project's operational emissions were estimated using the CalEEMod software. CalEEMod was used to forecast the daily regional criteria pollutant emissions from on-site area and stationary sources that would occur during long-term Project operations. For mobile sources, the estimated VMT for the Project uses were taken from the Project's VMT analysis in the CEQA Thresholds Analysis for the 6220 Yucca Street Mixed-Use Project Hollywood, California.[4] The EMFAC2017 model was run in the emissions mode (also referred to as the "Burden" mode) and

[4] Gibson Transportation Consulting, Inc., CEQA Thresholds Analysis for the 6220 Yucca Street Mixed-Use Project Hollywood, California. Provided in Appendix L-1 of the Project's Draft EIR.

used to generate Air Basin-specific vehicle fleet emission factors in units of grams or metric tons per mile. These emission factors were then applied to the daily VMT to obtain daily mobile source emissions.

Operation of the Project has the potential to generate criteria pollutant emissions through vehicle and truck trips traveling to and from the Project Site. In addition, emissions would result from area sources located on-site such as natural gas combustion from water heaters, boilers, and cooking stoves, landscaping equipment, and the use of consumer products.[5] The Project is not expected to contain any large stationary combustion equipment such as large boilers or combustion turbines.

Natural gas usage factors in CalEEMod are based on commercial and residential data from the California Energy Commission 2002 CEUS data adjusted to reflect more recent Title 24 improvements, and landscape equipment emissions are based on off-road emission factors from CARB. Emissions from the use of consumer products and the reapplication of architectural coatings are based on data provided in CalEEMod.

Other area-source emissions were estimated separately, outside of the CalEEMod software. Other area sources include charbroiling of meat that may occur on-site during food preparation activities in a restaurant kitchen. Emissions from charbroiling were calculated based on emissions factors available from the SCAQMD.[6] To provide a conservative analysis, it was assumed that the restaurant would charbroil meat with relatively high emission factors (i.e., hamburger and chicken meat). The quantity of meat charbroiled in the restaurant was based on survey data from facilities located in the SCAQMD jurisdiction.[7] The estimated emissions incorporate reductions achieved by compliance with emissions control requirements consistent with SCAQMD Rule 1138.

Stationary sources would include on-site emergency generator capacity, estimated at approximately 250 kilowatts (335 horsepower). The emergency generator would result in emissions during maintenance and testing operations. Emergency generators are permitted by the SCAQMD and regulated under SCAQMD Rule 1470. Maintenance and testing would not occur daily, but rather periodically, up to 50 hours per year per Rule 1470. For the purposes of estimating maximum daily emissions, it is estimated that the emergency generators would operate for up to two hours in a day for maintenance and testing purposes.

Operational air quality impacts were assessed based on the incremental increase in emissions compared to baseline conditions. Under CEQA, the baseline environmental setting for an EIR is

5 California Air Resources Board, OFFROAD Modeling Change Technical Memo: Change in Population and Activity Factors for Lawn and Garden Equipment, 6/13/2003, https://ww3.arb.ca.gov/msei/2001_residential_lawn_and_garden_changes_in_eqpt_pop_and_act.pdf. Accessed August 2019.

6 South Coast Air Quality Management District, Emission Factors for Commercial Cooking Operations, http://www.aqmd.gov/docs/default-source/rule-book/support-documents/rule-1138/par1138pdsr_appendixi.pdf?sfvrsn=2. Accessed August 2019.

7 As cited in: San Joaquin Valley Unified Air Pollution Control District, Final Draft Staff Report Rule 4692 (Commercial Charbroiling), February 21, 2002, https://ww3.arb.ca.gov/pm/pmmeasures/ceffect/reports/sjvapcd_4692_report.pdf. Accessed August 2019.

generally established at or around the time that the Notice of Preparation (NOP) for the EIR is published. As discussed previously, the Project Site is currently developed with one single-family residence, one duplex, one studio apartment, and three, two-story apartment buildings (43 existing multi-family/apartment units total) and associated carports and paved surface parking areas, for a total of 44 dwelling units. For the purposes of this analysis, no existing operational air quality emissions are assumed from the existing site uses and the Project's air quality emissions are conservatively considered to be net new operational emissions. Detailed Project operational emissions calculations are provided in **Exhibit B** of this Technical Appendix.

2.2.1 Emissions from Area Sources (Consumer Products, Coatings, Hearths, and Landscaping)

Area source emissions were calculated using CalEEMod default assumptions for the Project land uses. Area sources include hearths, consumer product use, architectural coatings, and landscape maintenance equipment. Emissions associated with natural gas usage are discussed in the building energy use section below.

Consumer Products

Consumer products are chemically formulated products used by household and institutional consumers, including, but not limited to, detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products; but does not include other paint products, furniture coatings, or architectural coatings. The SCAQMD conducted an evaluation of consumer product use compared to the total square footage of buildings using data from the CARB consumer product Emission Inventory and determined a VOC emission rate for consumer products applicable to areas within the SCAQMD jurisdiction.[8] To calculate the VOC emissions from consumer product use, CalEEMod incorporates the following equation and SCAQMD-approved emission factor:

Consumer Products:

Emissions = EF × Building Area

Where: EF = pounds of VOC per building square foot per day
The factor is 2.04×10^{-5} lbs/sqft/day for SCAQMD areas.
Building Area = The total square footage of all buildings including residential square footage.

Architectural Coatings

VOC off-gassing emissions result from evaporation of solvents contained in surface coatings such as in paints and primers. The methodology for operations is the same as the construction architectural coating methodology discussed above.

[8] California Air Pollution Control Officer's Association, California Emissions Estimator Model, User's Guide, Appendix E, Technical Source Documentation, Section E3 Consumer Products Summary, 2017.

Hearths (Fireplaces)

The Project would not include natural gas-fired fireplaces in the residential uses as per Project Design Feature PDF-AQ-1. Therefore, emissions from hearths (fireplaces) are not included in the Project's emissions calculations.

Landscaping Equipment

Emissions from Project uses include equipment used to maintain landscaping, such as lawnmowers and trimmers. The CalEEMod software uses landscaping equipment emission factors from the CARB OFFROAD emissions factor model and the CARB *Technical Memo: Change in Population and Activity Factors for Lawn and Garden Equipment (6/13/2003)*.[9] The CalEEMod software assumes that landscaping equipment operates for 250 days per year in the South Coast Air Basin.

Landscaping Equipment

$$\text{Emissions [g]} = \sum_i (\text{Units} \times EF_{LE})_i$$

Where: Units = Number of land use units (same land use type) [DU or sqft]
EF_{LE} = Emission factor [grams [g] / DU or sqft / day]
i = Summation index

2.2.2 Emissions from Building Energy Usage (Natural Gas)

With regard to energy usage, the consumption of fossil fuels to generate electricity and to provide heating and hot water generates criteria pollutants. Future fuel consumption rates are estimated based on specific square footage of the Project land uses. Energy usage (on-site natural gas consumption) for the Project is calculated within CalEEMod using the CEC CEUS and RASS data sets.[10] These data sets provide energy intensities of different land uses throughout the state and different climate zones. However, since the data from the CEUS is from 2002 and the RASS data is similarly from an earlier time period, the CalEEMod software incorporates correction factors to account for compliance with the Title 24 Building Standards Code. The correction factors are applied only to the new building construction.

Natural gas-related emissions of criteria pollutants associated with operation of the Project are based on the size of the Project land uses, and the natural gas demand factors for the land uses. Natural gas criteria pollutant emissions are generally calculated as follows:

Natural Gas:

$$\text{Emissions [lbs]} = \sum_i (\text{Units} \times D_{NG} \times EF_{NG})_i$$

[9] California Air Resources Board, OFFROAD Modeling Change Technical Memo: Change in Population and Activity Factors for Lawn and Garden Equipment, June 13, 2003, https://ww3.arb.ca.gov/msei/2001_residential_lawn_and_garden_changes_in_eqpt_pop_and_act.pdf. Accessed August 2019.

[10] California Energy Commission, California Commercial End-Use Survey, http://capabilities.itron.com/CeusWeb/Chart.aspx. Accessed August 2019.

Where: Units = Number of land use units (same type) [DU or 1000 sqft]
D_{NG} = Natural gas combustion factor [MMBtu/DU or 1000 sqft/year]
EF_{NG} = Emission factor [lbs/MMBtu]

2.2.3 Emissions from Building Energy Usage (Electricity)

Criteria air pollutant emissions are not required to be estimated for electricity.

2.2.4 Emissions from Mobile Sources

The Project's VMT was taken from the Project's VMT analysis in the CEQA Thresholds Analysis for the 6220 Yucca Street Mixed-Use Project Hollywood, California.[11] The VMT analysis is based on the City's VMT Calculator tool, which accounts for a variety of sociodemographic, land use, and built environment factors estimated for each census tract within the City as well as the interaction of land uses within a mixed-use development. Some of the key factors built into the VMT Calculator include travel behavior zones, mixed-use development methodology, population and employment assumptions, and Transportation Demand Management (TDM) measures that would be provided as project design features or incorporated as mitigation measures. Further information regarding the methods used by the VMT Calculator to estimate daily trips and daily VMT is provided in Section IV.L, *Transportation*, of the Project's Draft EIR. In general, VMT estimates consider the following factors described below.

Trip Type

The trip type breakdown describes the purpose of the trip generated at each land use. For example, the trip type breakdown indicates the percentage of trips generated at single family home for work, for shopping, and for other purposes. Multiplying the total trips for a land use by trip type breakdown percentage yields trips of a given trip type. Two sets of trip type breakdown are used in CalEEMod – residential breakdown and commercial breakdown.

Residential trip type: These include home-work (H-W), home-shop (H-S), or home-other (H-O). A home-work trip represents the trip from the home to the workplace. A home-shop trip represents the trip from the home to a land use where shopping takes place (generally retail). A home-other represents all other types of trips generated from the resident such as school, entertainment, etc. The trip type breakdown is from district supplied information or the 1999 Caltrans Statewide Travel Survey is used as default or specific information obtained from the various air quality management and air pollution control districts.

Commercial trip type: These include commercial-customer (C-C), commercial-work (C-W) and commercial-nonwork (C-NW). A commercial-customer trip represents a trip made by someone who is visiting the commercial land use to partake in the services offered by the Site. The commercial-work trip represents a trip made by someone who is employed by the commercial land use sector. The commercial-nonwork trip represents a trip associated with the commercial

11 Gibson Transportation Consulting, Inc., CEQA Thresholds Analysis for the 6220 Yucca Street Mixed-Use Project Hollywood, California. Provided in Appendix L-1 of the Project's Draft EIR.

land use other than by customers or workers. An example of C-NW trips includes trips made by delivery vehicles of goods associated with the land use.

Primary Trip Length

In CalEEMod, each trip type has a primary trip length associated with it. These trip lengths are based on the location and urbanization selected on the project characteristic screen. These values were supplied by the districts or use a default average for the state. Each district (or county) also assigns trip lengths for urban and rural settings.

Pass-by and Diverted Trips

Trip link types further describe the characteristics of the trip attracted to each land use, whether it's a primary trip, a diverted link trip, or a pass-by trip. For example, a commercial customer pass-by trip could be a person going from home to shop on his/her way to work. In addition, a commercial customer diverted-link trip could be a person going from home to work, and on its way making a diversion to shop. Pass-by trips generate virtually no additional running emissions but could generate additional resting and startup emissions. Diverted trips generate less running emissions compared to primary trips, and can also generate additional resting and startup emissions.

Mobile Source Emission Factors

Mobile source emissions were calculated outside of CalEEMod using the EMFAC2017 model. EMFAC was used to generate emission factors, in pounds per mile, for the South Coast Air Basin's motor vehicle fleet mix. Using the daily VMT and emission factors, daily criteria pollutant emissions were estimated.

Emissions from motor vehicles are dependent on model years and the specific types of vehicles that are used to travel to and from the Project Site. The emissions were calculated using a representative motor vehicle fleet mix for the Project Site location in the South Coast Air Basin for the opening year of the Project. All vehicle types would visit the Project Site; therefore, the use of the motor vehicle fleet mix for the Project Site location in the South Coast Air Basin is an appropriate modeling parameter. Mobile source emissions are generally calculated as follows:

Mobile Source:

$$\text{Emissions} = \sum_i (\text{VMT} \times \text{EF})_i$$

Where: VMT = Vehicle miles traveled
EF = EMFAC Fleet emissions factor [pounds per mile]
i = Summation index

2.2.5 Emissions from Stationary Sources

Stationary sources included diesel-fueled emergency generator, estimated to be up to approximately a 250 kilowatt (kW) in size, that would be installed at the Project Site. The generator emissions were based on emission factors from SCAQMD's Rule 1470 and USEPA.

Emissions associated with periodic maintenance and testing of the emergency generator (approximately rated at 250 kilowatts (335 horsepower) for the Project are estimated separately outside of the CalEEMod software. The emergency generator emissions are calculated based on compliance with SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines) mandated emission limits and operating hour constraints. As discussed previously, Rule 1470 applies to stationary compression ignition engine greater than 50 brake horsepower and sets limits on emissions and operating hours. In general, new stationary emergency standby diesel-fueled engines greater than 50 brake horsepower are not permitted to operate more than 50 hours per year for maintenance and testing. It was conservatively assumed that the generator would operate for a maximum of two hours per day for testing and maintenance and daily maximum emissions are based on this. In general, stationary-source emergency generator emissions are calculated as follows:

Stationary Source Emergency Generator:

$$Emissions_{Diesel}\,[g] = \sum_i (EF \times Pop \times HP \times Load \times Activity)_i$$

Where:	EF	=	Emission factor [g/bhp-hr]
	Pop	=	Population [quantity of same equipment type]
	HP	=	Maximum rated horsepower [hp]
	Load	=	Load Factor [dimensionless]
	Activity	=	Hours of operation [hours per day, hours per year]
	i	=	Summation index

2.2.6 Emissions from Restaurant Charbroiling

The Project's restaurant uses may include charbroiling of meat and deep-frying of meat and potatoes that may occur on-site during food preparation activities in a restaurant kitchen. Charbroiling emissions are calculated based on emissions factors available from the SCAQMD for charbroiling and frying.[12] In order to provide a conservative analysis, it was assumed that the restaurant would charbroil and deep-fat fry meat with relatively high emission factors (i.e., hamburger and chicken meat). The quantity of meat charbroiled and fried in the restaurant is based on survey data from the San Joaquin Valley Air Pollution Control District for "family restaurants."[13]

The estimated emissions account for reductions from compliance with emissions control requirements consistent with SCAQMD Rule 1138 (Control of Emissions from Restaurant Operations), which requires charbroilers to be equipped and operated with a control device that has been certified by the manufacturer to reduce particulate matter emissions by at least 85 percent. In general, stationary-source charbroiling emissions are calculated as follows:

[12] South Coast Air Quality Management District, Emission Factors for Commercial Cooking Operations, http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1138/par1138pdsr_appendixi.pdf?sfvrsn=2. Accessed August 2019.

[13] South Coast Air Quality Management District, Staff Report for Rule 1138 (Control of Emissions from Restaurant Operations), 1997 (as found in SJVAPCD Final Draft Staff Report: Rule 4692 (Commercial Charbroiling)), https://planning.lacity.org/eir/8150Sunset/References/4.B.%20Air%20Quality/AQ.14_SJVAPCD%20Charbroiling%20EF%20by%20Meat.pdf. Accessed August 2019.

Stationary Source Charbroiling and Deep-Fat Frying:

Emissions = ($\sum_i$ (Q_{MEAT} × EF × (1 - C)$_i$)

Where: Q_{MEAT} = Quantity of meat product charbroiled or deep-fat fried in a day [pounds/day]

EF = Emission factor [pounds pollutant per pounds meat]

C = Emissions control factor [percent], 86% for VOC and 85% for PM, per rule 1138

i = Summation index

2.2.7 Emissions from Solid Waste Decomposition

Criteria pollutant emissions are not required to be estimated for solid waste decomposition.

2.2.8 Emissions from Water Demand and Wastewater Generation and Treatment

Criteria pollutant emissions are not required to be estimated for water demand and wastewater generation and treatment.

2.3 Existing Operational Emissions

The Project Site is located within the Hollywood community of Los Angeles, and is currently developed with one single-family residence, one duplex, one studio apartment, and three, two-story apartment buildings (43 existing multi-family/apartment units total) and associated carports and paved surface parking areas, for a total of 44 dwelling units, all of which would be demolished and removed from the site. Existing emissions are associated with vehicle trips to and from the Project Site, on-site combustion of natural gas for heating and cooking, on-site combustion emissions from a wood burning fireplace and landscaping equipment, and fugitive emissions of VOCs from the use of household products and coatings. While the existing uses on the site currently generate some amount of operational emissions, for the purposes of this analysis, no existing operational air quality emissions are assumed from the existing site and the Project's air quality emissions are conservatively considered to be new operational emissions.

2.4 Localized Emissions Calculations (Construction and Operation)

The localized effects from the on-site portion of the maximum emissions were evaluated at nearby sensitive receptor locations potentially impacted by the Project in accordance with the SCAQMD *Final Localized Significance Threshold Methodology* (June 2003, revised July 2008).[14] The localized significance thresholds are only applicable to NO_X, CO, PM10, and PM2.5. The SCAQMD has established screening criteria that can be used to determine the

[14] South Coast Air Quality Management District, Final Localized Significance Threshold Methodology, 2008, http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/localized-significance-thresholds. Accessed August 2019.

maximum allowable daily emissions that would satisfy the localized significance thresholds and therefore not cause or contribute to an exceedance of the applicable ambient air quality standards without project-specific dispersion modeling. The localized analysis is based on this SCAQMD screening criteria. The screening criteria depend on: (1) the area in which the Project is located, (2) the size of the Project Site, and (3) the distance between the Project Site and the nearest sensitive receptor. The Project Site is located in the SCAQMD's Central Los Angeles Source Receptor Area (SRA) 1 and is approximately 1.16 acres in size. In accordance with SCAQMD's Localized Significance Threshold (LST) methodology, the nearest off-site sensitive receptors (single-family housing) were assumed to be located adjacent to the Project Site to the south along Vista Del Mar.[15] Construction and operational emissions from the Project were compared to the LSTs for a one-acre site in SCAQMD SRA 1 with sensitive receptors located within 25-meters.

According to the SCAQMD *Final Localized Significance Threshold Methodology*, "projects whose calculated emission budgets for the proposed construction or operational activities are above the LST emission levels found in the LST mass rate look-up tables should not assume that the project would necessarily generate adverse impacts. Detailed air dispersion modeling may demonstrate that pollutant concentrations are below localized significant levels."[16] Thus, if the screening criteria would be exceeded, dispersion modeling using the USEPA AMS/EPA Regulatory Model (AERMOD) dispersion model with meteorological data from the closest SCAQMD monitoring station would be used to further refine the localized impact analysis.

2.5 CO Hotspots

Emissions of CO are produced in greatest quantities from motor vehicle combustion and are usually concentrated at or near the ground level because they do not readily disperse into the atmosphere, particularly under cool, stable (i.e., low or no wind) atmospheric conditions. Localized areas where ambient concentrations exceed state and/or federal standards are termed CO hotspots. The potential for the Project to cause or contribute to the formation of off-site CO hotspots was evaluated based on prior dispersion modeling of the four busiest intersections in the Air Basin that was conducted by the SCAQMD for its CO Attainment Demonstration Plan in the AQMP.[17] The analysis compares the intersections with the greatest peak-hour traffic volumes that would be impacted by the Project to the intersections modeled by the SCAQMD. Project-impacted intersections with peak-hour traffic volumes that would be lower than the intersections modeled by the SCAQMD, in conjunction with lower background CO levels, would result in lower overall CO concentrations compared to the SCAQMD modeled values in its AQMP.

15 South Coast Air Quality Management District, Final Localized Significance Threshold Methodology, p. 3-3, 2008, http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/localized-significance-thresholds. Accessed August 2019. "Projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters."

16 South Coast Air Quality Management District, Final Localized Significance Threshold Methodology, p. 1-2, 2008.

17 South Coast Air Quality Management District, 2003 Air Quality Management Plan, Chapter 6 Clean Air Act Requirements, 2003, http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2003-air-quality-management-plan/2003-aqmp-ch-6.pdf. Accessed February 2020.

2.6 Toxic Air Contaminant Impacts

2.6.1 Construction

The greatest potential for TAC emissions during construction would be related to DPM emissions associated with the operation of heavy-duty equipment during excavation and grading activities. Construction activities associated with the Project would be sporadic, transitory, and short-term in nature (approximately 22 months). The SCAQMD has not adopted guidance requiring that quantitative health risk assessments (HRAs) be performed for short-term exposures to TAC emissions. The SCAQMD also has not formally adopted guidance that establishes a methodology for performing HRAs or that requires Lead Agencies to use the 2015 OEHHA guidance manual when assessing short-term TAC exposures from construction emissions for CEQA analyses. Specifically, the SCAQMD states that "SCAQMD currently does not have guidance on construction Health Risk Assessments" and does not apply the 2015 OEHHA update to construction.[18] Furthermore, with respect to the 2015 OEHHA guidance, in comments presented to its Governing Board (Board Meeting Date: June 5, 2015, Agenda No. 28) relating to TAC exposures associated with Rules 1401, 1401.1, 1402 and 212 revisions, with regard to the use of the revised OEHHA guidelines for projects subject to CEQA, SCAQMD staff reported that:[19]

> *The Proposed Amended Rules are separate from the CEQA significance thresholds. Per the Response to Comments Staff Report PAR 1401, 1401.1, 1402, and 212 A—(8 June 2015), SCAQMD staff is currently evaluating how to implement the Revised OEHHA Guidelines under CEQA. The SCAQMD staff will evaluate a variety of options on how to evaluate health risks under the Revised OEHHA Guidelines under CEQA. The SCAQMD staff will conduct public workshops to gather input before bringing recommendations to the Governing Board. In the interim, staff will continue to use the previous guidelines for CEQA determinations.*

To date, the SCAQMD has not conducted public workshops nor developed policy relating to the applicability of applying the revised 2015 OEHHA guidance for projects prepared by other public/lead agencies subject to CEQA or for mixed-use residential and commercial projects, such as the proposed Project.

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18 South Coast Air Quality Management District, Final Environmental Assessment for: Proposed Amended Rule 307.1 – Alternative Fees for Air Toxics Emissions Inventory; Proposed Amended Rule 1401 – New Source Review of Toxic Air Contaminants; Proposed Amended Rule 1402 – Control of Toxic Air Contaminants from Existing Sources; SCAQMD Public Notification Procedures for Facilities Under the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) and Rule 1402; and, SCAQMD Guidelines for Participating in the Rule 1402 Voluntary Risk, p. 2-23, September 2016, http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2016/final-ea_par-307-1_1401_1402.pdf?sfvrsn=4. Accessed August 2019.

19 South Coast Air Quality Management District, Board Meeting Date: June 5, 2015, Agenda No. 28, Proposed Amended Rules 1401 – New Source Review of Toxic Air Contaminants, 1401.1 – Requirements for New and Relocated Facilities Near Schools, Rule 1402 – Control of Toxic Air Contaminants from Existing Sources, and 212 – Standards for Approving Permits and Issuing Public Notice, 2015.

Therefore, in accordance with the methodology supported by the SCAQMD prior to the 2015 OEHHA guidance, a qualitative assessment of the potential impacts associated with the Project's short-term construction TAC emissions was undertaken.

The Project Site is located in close proximity to a number of sensitive air quality receptors: the nearest air quality sensitive receptors are located adjacent to the Project Site to the north across Yucca Street, the east across Vista Del Mar Avenue, the west across Argyle Avenue, and directly bordering the Project Site to the south. As a result, the assessment concludes that the Project's particular location in close proximity to sensitive air quality receptors in the immediate vicinity of the Project Site in all cardinal directions could potentially result in significant impacts. Therefore, a refined quantitative construction HRA was prepared to further evaluate the Project's potential to result in health risk impacts to these surrounding sensitive air quality receptors. The construction HRA was performed through a refined dispersion modeling approach using the USEPA/AMS Regulatory Model (AERMOD). Consistent with SCAQMD recommendations, AERMOD was run using the urban dispersion modeling parameter.[20] Meteorological data from the SCAQMD's Central Los Angeles monitoring station within Source-Receptor Area (SRA) 1 was used to represent local weather conditions and prevailing winds data. The SCAQMD provides AERMOD-ready meteorological data files at this location for years 2010, 2011, 2014, 2015, and 2016. Terrain data from the U.S. Geological Survey was used to assign elevations to modeled emissions sources and modeled receptor locations. The emission sources were characterized as volume sources within AERMOD. Volume sources for the on-site heavy-duty construction equipment were placed throughout the entire Project Site boundary. Volume sources for the trucks were placed on the truck route within approximately 0.25-miles radius of the Project Site boundary. Cartesian grid receptor points were placed within AERMOD at sensitive receptor locations discussed above in consideration of the proximity of the sensitive receptors to the Project Site and their potential to result in maximum impacts for sensitive air quality receptors. The receptors points were spaced 5 meters apart, which is consistent with SCAQMD dispersion modeling recommendations.[21]

Construction TAC emissions were modeled based on emissions from the CalEEMod software, which reports DPM exhaust emissions from diesel-fueled construction equipment as PM10 and PM2.5, as DPM consists of PM10 and PM2.5. In addition, haul and vendor truck emissions were estimated using the CARB on-road vehicle emissions factor (EMFAC2017) model to generate PM10 exhaust emission factors for medium- and heavy-duty trucks. Documentation from CARB indicates that DPM exhaust consists of 92 percent PM2.5 and 100 percent PM10 (PM2.5 is a subset of PM10).[22] Therefore, for the purposes of this analysis, the PM10 construction exhaust emissions from CalEEMod and EMFAC2017 were used in this analysis.

[20] South Coast Air Quality Management District, Modeling Guidance for AERMOD, Urban Dispersion Option, http://www.aqmd.gov/home/air-quality/meteorological-data/modeling-guidance. Accessed March 2020.

[21] South Coast Air Quality Management District, Modeling Guidance for AERMOD, Urban Dispersion Option, http://www.aqmd.gov/home/air-quality/meteorological-data/modeling-guidance. Accessed March 2020.

[22] California Air Resources Board, Speciation Profiles Used in ARB Modeling, PMSIZE (Excel)-Particle size fraction data for source categories, PM Profile Number 425 (Diesel Vehicle Exhaust), https://www.arb.ca.gov/ei/speciate/speciate.htm. Accessed August 3, 2018.

As discussed previously, the SCAQMD does not require land use development projects to prepare quantitative construction HRAs and therefore has no guidance on the preparation of construction HRAs.[23] Thus, health risk calculations were used from available SCAQMD stationary source permitting guidance documents and stationary source risk assessment procedures normally used to evaluate health risk impacts from long-term operations for stationary source facility permit projects in which the SCAQMD is the lead agency. While the SCAQMD is not the lead agency for this Project, the SCAQMD risk assessment procedures provide a uniform approach for evaluating health risks. Health risk calculations were performed using the following 2003 OEHHA methodology and associated SCAQMD exposure parameters. As stated above, the SCAQMD has not held public workshops nor adopted policies relating to the applicability of applying the revised 2015 OEHHA guidance for projects prepared by other public/lead agencies subject to CEQA or for mixed-use residential and commercial projects, such as the proposed Project. Thus, the 2003 OEHHA methodology continues to be used for CEQA determinations.[24]

- Office of Environmental Health Hazard Assessment (OEHHA) 2003 Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (2003 Guidance Manual).[25]

- SCAQMD, Risk Assessment Procedures for Rules 1401 and 212, Appendix L, Version 7.0, 2012 (2012 Risk Assessment Procedures).[26]

The health risk impacts using the OEHHA 2003 Guidance Manual and SCAQMD 2012 Risk Assessment Procedures are calculated as follows:

Equation 1: Risk = Dose × Cancer Potency Factor

where:

Equation 2: $Dose = C_{AIR} \times DBR \times A \times EF \times ED \times EVF \times 10^{-6} / AT$

[23] South Coast Air Quality Management District, Final Environmental Assessment for: Proposed Amended Rule 307.1 – Alternative Fees for Air Toxics Emissions Inventory; Proposed Amended Rule 1401 – New Source Review of Toxic Air Contaminants; Proposed Amended Rule 1402 – Control of Toxic Air Contaminants from Existing Sources; SCAQMD Public Notification Procedures for Facilities Under the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) and Rule 1402; and, SCAQMD Guidelines for Participating in the Rule 1402 Voluntary Risk, page 2-23, September 2016, http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2016/final-ea_par-307-1_1401_1402.pdf?sfvrsn=4. Accessed August 23, 2018.

[24] South Coast Air Quality Management District, Board Meeting Date: June 5, 2015, Agenda No. 28, Proposed Amended Rules 1401 – New Source Review of Toxic Air Contaminants, 1401.1 – Requirements for New and Relocated Facilities Near Schools, Rule 1402 – Control of Toxic Air Contaminants from Existing Sources, and 212 – Standards for Approving Permits and Issuing Public Notice, 2015.

[25] Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, August 2003, https://oehha.ca.gov/media/downloads/crnr/hrafinalnoapp.pdf. Accessed August 29, 2018.

[26] South Coast Air Quality Management District, Risk Assessment Procedures for Rules 1401 and 212, Appendix L, Version 7.0, revised June 5, 2012, http://www.aqmd.gov/docs/default-source/planning/risk-assessment/risk-assessment-procedures-v-7.pdf?sfvrsn=4, http://www.aqmd.gov/docs/default-source/planning/risk-assessment/attachment-l.pdf?sfvrsn=4. Accessed August 29, 2018.

where:

C_{AIR} = concentration in microgram per cubic meter (averaged over the exposure duration)
DBR = breathing rate in liter per kilogram of body weight per day
A = inhalation absorption factor (1 for DPM)
EF = exposure frequency in days per year
ED = exposure duration in years
EVF = Exposure Value Factor (unitless)
AT = averaging time period over which exposure is averaged in days (25,550 days for 70 years)

Potential non-cancer effects of chronic (i.e., long term) exposures were evaluated using the Hazard Index approach. The Hazard Index is calculated by dividing the maximum modeled concentration of a TAC at the maximum impacted sensitive receptor by the Reference Exposure Level (REL). The REL is the concentration at or below which no adverse non-cancer health effects are known or expected to occur for that TAC. Therefore, a Hazard Index of less than 1.0 means that the maximum impacted sensitive receptor would be exposed to TAC concentrations at a level in which adverse non-cancer health effects would not be known or expected to occur. The chronic REL for DPM is 5 micrograms per cubic meter and the chronic hazard index target organ for DPM is the respiratory system.[27] Non-cancer health impacts for DPM are associated with chronic (annual) exposures. A hazard index equal to or greater than 1.0 represents a significant chronic health hazard.

2.6.2 Operations

During long-term operations, TACs could be emitted as a result of periodic maintenance operations, period testing and maintenance of the emergency generator, restaurant charbroiling, cleaning, painting, etc., and periodic visits from delivery trucks and service vehicles. However, these activities are expected to be occasional and to result in minimal exposure to off-site sensitive receptors. As the Project consists of residential, and commercial/restaurant uses, the Project would not include sources of substantial TAC emissions identified by the SCAQMD or CARB siting recommendations.[28, 29] Thus, a qualitative analysis is appropriate for assessing the Project's operational TAC emissions. The siting of the Project itself in relation to off-site sources of TACs is addressed under land use compatibility for the surrounding area in Section IV.H, *Land Use and Planning*, of the Project's Draft EIR.

3. Project Characteristics

The Project is considered an "infill" project, as it would replace existing residential uses with a high-density, mixed-use development. The Project proposes to increase density, consistent with

[27] California Air Resources Board, "Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values" and "OEHHA/ARB Approved Chronic Reference Exposure Levels and Target Organs," Tables last updated May 8, 2018, http://www.arb.ca.gov/toxics/healthval/healthval.htm. Accessed June 1, 2018.

[28] South Coast Air Quality Management District, Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning, 2005, Table 2-3, http://www.aqmd.gov/docs/default-source/planning/air-quality-guidance/complete-guidance-document.pdf?sfvrsn=4. Accessed August 2019.

[29] California Air Resources Board, Air Quality and Land Use Handbook: A Community Health Perspective, 2005, Table 1-1, https://ww3.arb.ca.gov/ch/landuse.htm. Accessed August 2019.

compact growth, on a parcel of infill urban land accessible to and well served by public transit including frequent and comprehensive transit services. The Project's new housing and job growth, is focused in a high-quality transit area (HQTA), which SCAG defines as an area within a half mile of a well-serviced transit stop[30] and a Transit Priority Area (TPA), which the City defines as an area within one-half mile of a major transit stop that is existing or planned.[31] The Project's urban location setting and its land use characteristics, as identified by the California Air Pollution Control Officers Association (CAPCOA), of Increased Density, Location Efficiency, Increased Land Use Diversity and Mixed-Uses, and Increased Transit Accessibility have been shown by CAPCOA to reduce vehicle trips and VMT, and corresponding vehicle emissions; the Project's incorporation of these features into its design further demonstrates its consistency with the 2016 AQMP by reducing its vehicle trips, VMT and greenhouse gas (GHG) and other associated air pollutant emissions. Refer to the CAPCOA guidance on mitigating or reducing emissions from land use development projects, *Quantifying Greenhouse Gas Mitigation Measures*, for further information on VMT reductions from urban land use characteristics.[32]

The following Project Design Features (PDFs) would be incorporated into the Project.

> **PDF-AQ-1: Green Building Measures:** The Project will be designed and operated to exceed the applicable requirements of the State of California Green Building Standards Code and the City of Los Angeles Green Building Code.
>
> Green building measures will include, but are not limited to the following:
>
> - The Project will be designed to optimize energy performance and reduce building energy cost by a minimum of 5 percent for new construction compared to the Title 24 Building Energy Efficiency Standards (2016).
> - The Project will be designed to optimize energy performance and reduce building energy cost by installing energy efficient appliances that meet the USEPA ENERGY STAR rating standards or equivalent.
> - The Project will provide a minimum of 30 kilowatts of photovoltaic panels on the Project Site, unless additional kilowatts of photovoltaic panels become feasible due to additional area being added to the Project Site.
> - The Project will reduce outdoor potable water use by a minimum of 20 percent compared to baseline water consumption as required in LAMC Section 99.04.304. Reductions would be achieved through drought-tolerant/California native plant species selection, irrigation system efficiency, alternative water supplies (e.g., stormwater retention for use in landscaping), and/or smart irrigation systems (e.g., weather-based controls).

[30] Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, 2016, p. 8, http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS.pdf. Accessed August 2019.

[31] City of Los Angeles, Department of City Planning, Zoning Information File ZI NO. 2451 Transit Priority Areas (TPAs)/Exemptions to Aesthetics and Parking within TPAs Pursuant to CEQA, https://files.alston.com/files/docs/ZI%202451-TPA-Aesthetics-and-Parking.pdf. Accessed August 2019.

[32] California Air Pollution Control Officers Association, *Quantifying Greenhouse Gas Mitigation Measures*, (2010), http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf. Accessed August 2019.

- The Project will reduce indoor potable water use by a minimum of 20 percent compared to baseline or standard water consumption as defined in LAMC Section 99.04.303 by installing water fixtures that exceed applicable standards.
- The Project would not include fireplaces in the residential buildings.

In addition, as discussed in Section IV.F, *Greenhouse Gas Emissions*, of the Project's Draft EIR, Project Design Features will include:

> **PDF-GHG-1: GHG Emission Offsets:** The Project will provide or obtain GHG emission offsets as required in the Project's Environmental Leadership Development Project certification and related documentation pursuant to the *Jobs and Economic Improvement Through Environmental Leadership Act*.
>
> **PDF-GHG-2:** At least 20 percent of the total code-required parking spaces provided for all types of parking facilities shall be capable of supporting future electric vehicle supply equipment (EVSE). Plans shall indicate the proposed type and location(s) of EVSE and also include raceway method(s), wiring schematics and electrical calculations to verify that the electrical system has sufficient capacity to simultaneously charge all electric vehicles at all designated EV charging locations at their full rated amperage. Plan design shall be based upon Level 2 or greater EVSE at its maximum operating capacity. Only raceways and related components are required to be installed at the time of construction. When the application of the 20-percent requirement results in a fractional space, round up to the next whole number. A label stating "EV CAPABLE" shall be posted in a conspicuous place at the service panel or subpanel and next to the raceway termination point.
>
> **PDF-GHG-3:** At least 5 percent of the total code-required parking spaces shall be equipped with EV charging stations. Plans shall indicate the proposed type and location(s) of charging stations. Plan design shall be based on Level 2 or greater EVSE at its maximum operating capacity. When the application of the 5-percent requirement results in a fractional space, round up to the next whole number.

4. Mitigation Measures

Project impacts regarding air quality would be potentially significant for construction emissions. Therefore, mitigation measures are required. The following mitigation measures would reduce construction-related emissions:

> **MM-AQ-1: Construction Measures:** The Project shall utilize off-road diesel-powered construction equipment that meets the CARB and USEPA Tier 4 Final off-road emissions standards for equipment rated at 50 hp or greater during Project construction. To the extent possible, pole power shall be made available for use with electric tools, equipment, lighting, etc. These requirements shall be included in applicable bid documents and successful contractor(s) must demonstrate the ability to supply such equipment. A copy of each unit's certified tier specification or model year specification and CARB or SCAQMD operating permit (if applicable) shall be available upon request at the time of mobilization of each applicable unit of equipment.

Mitigation measure MM-AQ-1 requires the Project to utilize off-road diesel-powered construction equipment that meets or exceeds the CARB and USEPA Tier 4 Final off-road

emissions standards for equipment rated at 50 horsepower or greater during Project construction. Implementation of MM-AQ-1 would reduce emissions of VOC, NO_X, PM10, and PM2.5 (refer to emissions modeling data provided in **Exhibit A**).

Emissions of SO_X would be unchanged with incorporation of the Tier 4 Final off-road emissions standards for the construction equipment. Emissions of CO would increase due to the engine technology involved in reducing NO_X emissions; however, even at that level, CO emissions would still be below the significance threshold.

The results of the criteria pollutant calculations with mitigation measure MM-AQ-1 are presented in Table 2 below. The level of emissions reductions from implementation of MM-AQ-1 is consistent with the overall stringency of the Tier 4 Final emissions standards. For example, NO_X emissions from construction equipment are reduced by approximately 41 to 95 percent as compared to equipment meeting the less stringent Tier 2 off-road emissions standards, depending on the specific horsepower rating of each piece of equipment.[33] Similarly, implementation of MM-AQ-1 results in the reduction of DPM emissions from the Project's construction equipment by 81 to 96 percent as compared to equipment meeting the less stringent Tier 2 off-road emissions standards, depending on the specific horsepower rating of each piece of equipment.[34] The use of Tier 4 Final-compliant equipment a Statewide standard recommended by SCAQMD and CARB, and will soon be required of nearly all construction projects in the State. The emissions reductions achieved by the Tier 4 Final equipment have been scientifically documented by CARB and included in the Final Regulation Order for Tier 4 Off-Road Compression Engines,[35] which are reflected in this analysis. The Tier 4 Final standard exceeds the State's fleet-wide BACT standard, as it takes into account the use of other higher emission engines within fleets.[36]

As shown in Table 1 below, the Project's unmitigated construction daily emissions of NO_X would exceed the SCAQMD threshold of significance and result in a potentially significant impact; however, as shown in Table 2 below, impacts would be reduced to less than significant with implementation of mitigation measure MM-AQ-1.

Project impacts regarding regional operations, localized construction and localized operations air quality emissions would be less than significant.

33 California Air Pollution Control Officers Association, California Emissions Estimator Model Appendix: Appendix D: Default Data Tables, September 2016, p. D- 77, http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/05_appendix-d2016-3-1.pdf?sfvrsn=2. Accessed August 2019.

34 California Air Pollution Control Officers Association, California Emissions Estimator Model Appendix: Appendix D: Default Data Tables, September 2016, p. D- 77, http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/05_appendix-d2016-3-1.pdf?sfvrsn=2. Accessed August 2019.

35 California Air Resources Board, Final Regulation Order, Tier 4 Off-Road Compression-Ignition Engines, https://ww3.arb.ca.gov/regact/2011/soreci2011/soreci2011part5.pdf. Accessed February 2020.

36 California Air Resources Board, Frequently Asked Questions, In-Use Off-Road Diesel Vehicle Regulation, 2014, https://ww3.arb.ca.gov/msprog/ordiesel/faq/tierlifefaq.pdf. Accessed February 2020.

As shown in Table 6 below, Project construction would result in a cancer risk of 0.47 with implementation of mitigation measure MM-AQ-1. As shown in Table 6 below, non-cancer chronic impacts would be well below a hazard index of 1.0.

5. Emissions Summaries

5.1 Regional Emissions

5.1.1 Project Construction

The results of the regional construction criteria pollutant emissions for VOC, NO_X, CO, SO_X, PM10, and PM2.5 are presented in **Table 1,** *Estimated Unmitigated Maximum Regional Construction Emissions*, for the unmitigated Project construction scenario without implementation of MM-AQ-1 and in **Table 2,** *Estimated Mitigated Maximum Regional Construction Emissions*, for the mitigated Project construction scenario with implementation of MM-AQ-1.

TABLE 1
ESTIMATED UNMITIGATED MAXIMUM REGIONAL CONSTRUCTION EMISSIONS (POUNDS PER DAY) [a]

Regional Emissions	VOC	NO_X	CO	SO_2	PM10 [b]	PM2.5 [b]
Demolition	5	59	24	<1	5	3
Site Preparation	4	44	22	<1	5	3
Grading/Excavation	7	112	41	<1	10	5
Building Construction	4	24	29	<1	5	2
Building Construction + Arch. Coating + Paving	33	38	45	<1	6	3
Paving	2	16	16	<1	1	1
Maximum Regional Emissions	**33**	**112**	**45**	**<1**	**10**	**5**
SCAQMD Indicators	**75**	**100**	**550**	**150**	**150**	**55**
Over (Under)	(42)	**12**	(505)	(150)	(140)	(50)
Exceeds Indicator?	No	**Yes**	No	No	No	No

[a] Emission quantities are rounded to "whole number" values. As such, the "total" values presented herein may be one unit more or less than actual values. Exact values (i.e., non-rounded) are provided in the CalEEMod model printout sheets and/or calculation worksheets that are provided in Exhibit A of this Technical Appendix.

[b] PM10 and PM2.5 emissions estimates assume compliance with SCAQMD Rule 403 requirements for fugitive dust suppression.

Source: ESA, 2020

TABLE 2
ESTIMATED MITIGATED MAXIMUM REGIONAL CONSTRUCTION EMISSIONS (POUNDS PER DAY) [a]

Regional Emissions	VOC	NO_X	CO	SO_2	PM10 [b]	PM2.5 [b]
Demolition	2	25	24	<1	3	1
Site Preparation	1	2	20	<1	2	1
Grading/Excavation	4	70	43	<1	8	4
Building Construction	2	9	29	<1	4	1
Building Construction + Arch. Coating + Paving	30	10	48	<1	5	1
Paving	<1	1	18	<1	<1	<1
Maximum Regional Emissions	**30**	**70**	**48**	**<1**	**8**	**4**
SCAQMD Numeric Indicators	**75**	**100**	**550**	**150**	**150**	**55**
Over (Under)	(45)	(30)	(502)	(150)	(142)	(51)
Exceeds Indicator?	No	No	No	No	No	No

[a] Emission quantities are rounded to "whole number" values. As such, the "total" values presented herein may be one unit more or less than actual values. Exact values (i.e., non-rounded) are provided in the CalEEMod model printout sheets and/or calculation worksheets that are provided in Exhibit A of this Technical Appendix.

[b] PM10 and PM2.5 emissions estimates assume compliance with SCAQMD Rule 403 requirements for fugitive dust suppression.

Source: ESA, 2020

5.1.2 Project Operations

The results of the regional operational criteria pollutant emissions calculations for VOC, NO_X, CO, SO_X, PM10, and PM2.5 for Project operations are presented in **Table 3,** *Estimated Maximum Regional Operational Emissions.*

TABLE 3
ESTIMATED MAXIMUM REGIONAL OPERATIONAL EMISSIONS (POUNDS PER DAY) [a]

Source	VOC	NO_X	CO	SO_2	PM10	PM2.5
Project						
Area (Coating, Consumer Products, Landscaping)	9	4	19	<1	<1	<1
Energy (Natural Gas)	<1	2	1	<1	<1	<1
Stationary (Charbroiling)	<1	—	—	—	1	<1
Stationary (Emergency Generator)	<1	3	3	<1	<1	<1
Mobile	4	9	38	<1	10	3
Total Regional Emissions	**13**	**17**	**61**	**<1**	**11**	**4**
SCAQMD Numeric Indicators	**55**	**55**	**550**	**150**	**150**	**55**
Over/(Under)	(42)	(38)	(489)	(150)	(139)	(51)
Exceeds Thresholds?	No	No	No	No	No	No

[a] Emission quantities are rounded to "whole number" values. As such, the "total" values presented herein may be one unit more or less than actual values. Exact values (i.e., non-rounded) are provided in the CalEEMod model printout sheets and/or calculation worksheets that are provided in Exhibit B of this Technical Appendix.

Source: ESA, 2019

5.2 Localized Emissions

5.2.1 Project Construction

The results of the localized construction criteria pollutant emissions calculations for NO_X, CO, PM10, and PM2.5 are presented in **Table 4,** *Estimated Maximum Localized Construction Emissions*.

TABLE 4
ESTIMATED MAXIMUM LOCALIZED CONSTRUCTION EMISSIONS (POUNDS PER DAY) [a]

Source	NO_X	CO	PM10[b]	PM2.5[b]
Demolition	36	19	3.2	2.0
Site Preparation	43	21	4.5	3.2
Grading/Excavation	44	27	4.1	2.8
Building Construction	16	12	1.0	0.9
Building Construction + Arch. Coating + Paving	30	27	1.8	1.6
Paving	15	15	0.9	0.8
Maximum Localized (On-Site) Emissions	**44**	**27**	**4.5**	**3.2**
SCAQMD Numeric Indicators [c]	**79**	**739**	**5.5**	**3.3**
Over (Under)	(35)	(712)	(1.0)	(0.1)
Exceed Threshold?	No	No	No	No

[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Exhibit A of this Technical Appendix.

[b] Emissions assume fugitive dust control measures consistent with SCAQMD Rule 403.

[c] The SCAQMD LSTs are based on Source Receptor Area 1 (Central Los Angeles) for a 1.16-acre site within a 25-meter receptor distance.

Source: ESA, 2020

5.2.2 Project Operations

The results of the localized operational criteria pollutant emissions calculations for NO_X, CO, PM10, and PM2.5 are presented in **Table 5,** *Estimated Maximum Localized Operational Emissions.*

TABLE 5
ESTIMATED MAXIMUM LOCALIZED OPERATIONAL EMISSIONS (POUNDS PER DAY) [a]

Source	VOC	NO_X	CO	SO_2	PM10	PM2.5
Project						
Area (Coating, Consumer Products, Landscaping)	9	4	19	<1	0.4	0.4
Energy (Natural Gas)	<1	2	1	<1	0.1	0.1
Stationary (Charbroiling)	<1	—	—	—	0.6	0.4
Stationary (Emergency Generator)	<1	3	3	<1	<0.1	<0.1
Total Localized (On-Site) Emissions	**9**	**8**	**23**	**<1**	**1.1**	**0.9**
SCAQMD Numeric Indicators	**–**	**79**	**739**	**–**	**2.0**	**1.2**
Over/(Under)	–	(71)	(716)	–	(0.9)	(0.3)
Exceeds Thresholds?	–	No	No	–	No	No

[a] Totals may not add up exactly due to rounding in the modeling calculations Detailed emissions calculations are provided in Exhibit B of this Technical Appendix.
[b] The SCAQMD LSTs are based on Source Receptor Area 1 (Central Los Angeles) for a 1.16-acre site within a 25-meter receptor distance.

Source: ESA, 2019

5.3 Toxic Air Contaminant Health Risk Calculations

The results of this refined AERMOD dispersion modeling and health risk assessment calculations are summarized in **Table 6**, *Estimated Maximum Construction Health Risk Impacts*, and shows that TAC emissions from construction activities would not expose sensitive receptors to substantial TAC concentrations with implementation of mitigation measure MM-AQ-1. Calculation details are provided in **Exhibit C** of this Technical Appendix.

TABLE 6
ESTIMATED MAXIMUM CONSTRUCTION HEALTH RISK IMPACTS

	Maximum Cancer Risk (in one million)		Maximum Non-Cancer Chronic Hazard Index	
Air Quality Sensitive Receptor	**Unmitigated**	**Mitigated**	**Unmitigated**	**Mitigated**
Maximum Exposed Individual	10.4	0.47	0.46	0.02
SCAQMD Thresholds of Significance	**10**	**10**	**1.0**	**1.0**
Exceed Threshold?	Yes	No	No	No

SOURCE: ESA, 2020.

Exhibit A

Project Construction Emissions

ESA

A-1 Summary of Assumptions

6220 West Yucca Street Mixed Use Project
Draft Environmental Impact Report
Air Quality and Greenhouse Gas Assessment

Project Information

Land Use	CalEEMod Land Use Type	Units			
Residential	High-rise Apartment	210	DU	242,285	sf
Recreational	Hotel	136	rooms	80,335	sf
Retail	Strip Mall	3.5	KSF	3,450	sf
Recreational	Restaurant	9.1	KSF	9,050	sf
Parking	Unenclosed Parking with Elevator	232	spaces	100,483	sf
Parking	Enclosed Parking with Elevator	206	spaces	89,222	sf
Pool/Deck/Spa	Recreational Swimming Pool	4.8	KSF	4,840	sf
Fitness Center	Health Club	2.5	KSF	2,530	sf
Other Open Space/Amenities	City Park	18.5	KSF	18,535	sf
Total Building Area (excluding parking and open space)				335,120	sf
Total Lot Area (acres)/Developed Area (sf)		1.16	acres		

Note:

a. California Department of Finance, E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2014 with 2010 Census Benchmark, http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2011-20/view.php. Accessed September 2014.

Source: 6220 West Yucca Design Plans, prepared by Togawa Smith Martin 2016.

Construction Schedule and California Emissions Estimator Model (CalEEMod) Inputs

CalEEMod Construction Phase	Start Date	End Date	No. Work Days	Demo (CY)	Demo Truck Capacity (CY)	Demo Truck Total One-Way Trips	Demo Truck Daily One-Way Trips	Soil Export (CY)	Soil Import (CY)	Soil Haul Truck Capacity (CY)	Soil Haul Truck Total One-Way Trips	Soil Haul Truck Daily One-Way Trips	Vendor One-Way Trips/Max Day [a]	Worker One-Way Trips/Max Day [b]
Demolition	1/1/2018	1/21/2018	15	5,000	10	1,000	67						6	18
Site Preparation	1/22/2018	1/31/2018	8											18
Grading/Excavation	2/1/2018	5/31/2018	86					120,000	-	14	17,200	200	6	20
Building Construction 1	6/1/2018	6/30/2019	281										73	280
Building Construction 2	7/1/2019	10/31/2019	89										73	280
Paving	9/1/2019	12/31/2019	87											18
Architectural Coating	7/1/2019	10/31/2019	89											56

Notes:

a. Vendor trips are associated with the Building Construction phase and are based on CalEEMod assumptions.

b. Worker trips are based on CalEEMod assumptions.

Source: ESA 2019.

6220 West Yucca Street Mixed Use Project
Air Quality and Greenhouse Gas Assessment

Construction Assumptions - Demolition

Demolition Schedule				**Notes**
Start Date	1/1/2018			
End Date	1/21/2018			
Work Days	15			

Demolition Quantities

Land Use	**Amount**	***Units***		
6220-6224 Yucca	27.0	*KSF*		Estimate from Google Earth, two story multi-family
6210-6216 Yucca	16.0	*KSF*		Estimate from Google Earth, two story multi-family
1765-1779 Vista del Mar	5.3	*KSF*		Estimate from Google Earth, single story and two story single-family
Total	**48.3**	*KSF*		
Total (rounded up)	**50.0**		<-------	**ENTER VALUE INTO CALEEMOD**

Demolition Volume

Total Area (KSF)	50			
Floor Height (ft)	10			Assumed
Building Volume (ft3)	500,000			
Building Volume (CY)	18,519			
Debris Volume (CY)	5,000	*(rounded, estimated)*		Rounded, 1 CY building volume = 0.25 CY waste volume
Truck Size (CY)	10			
Total One-way Truck Trips	**1,000**	*(rounded, estimated)*	<-------	**ENTER VALUE INTO CALEEMOD**
Daily One-way Truck Trips	67	*trips/day*		

6220 West Yucca Street Mixed Use Project
Air Quality and Greenhouse Gas Assessment

Construction Assumptions - Excavation

Demolition Schedule

Start Date	2/1/2018
End Date	5/31/2018
Duration (days)	86

Estimated Soil Excavation

Land Use	Height	Area		Resulting Volume		Soil Export
Loading Area	15 feet	1.0	KSF =	18,150 ft3	=	672 CY
Building 1 Sub Parking	11 feet	108.0	KSF =	1,437,480 ft3	=	53,240 CY
Building 2 Sub Parking	11 feet	7.0	KSF =	93,170 ft3	=	3,451 CY
Foundation	20 feet	48.0	KSF (footprint) =	1,161,600 ft3	=	43,022 CY
Total						**100,385 CY**
Total with 10% Contingency Added						**110,424 CY**

Total Soil Export (CY)	**120,000**	*(rounded, estimated)*	<-------	**ENTER VALUE INTO CALEEMOD**
Truck Size (CY)	**14**			
Total One-way Truck Trips	**17,200**		<-------	**ENTER VALUE INTO CALEEMOD**
Daily One-way Truck Trips	200	*trips/day*		

6220 Yucca
Air Quality Assessment

Localized Significance Thresholds
(SCAQMD, Final Localized Significance Threshold Methodology, Appendix C (2008))

Source Receptor Area 1
Adjacent to Offsite Receptors (i.e., within 25 meters)

	Screening Values		Project Site [a]
Acres	1	2	1.16
Construction LSTs			
NOX	74	108	**79**
CO	680	1,048	**739**
PM10	5	8	**5.5**
PM2.5	3	5	**3.3**
Operational LSTs			
NOX	74	108	**79**
CO	680	1,048	**739**
PM10 [b]	2	2	**2.1**
PM2.5	1	2	**1.2**

Notes:

a. Project screening levels are linearly interpolated based on the 1- and 2- acre acreening levels.

b. The SCAQMD LSTs are based on Source Receptor Area 1 (Central Los Angeles County) for a 1.16-acre site with sensitive receptors conservatively assumed to be located adjacent to the construction area.

A-2 Construction Emissions Summaries

Yucca Mixed EIR
Regional Construction Emissions without Mitigation Measures

SUMMER	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
				lb/day		
Demolition -2018	4.60	59.20	24.50	0.08	5.19	2.90
Site Preparation - 2018	4.22	43.56	21.74	0.04	4.73	3.23
Grading - 2018	7.07	111.54	40.76	0.19	9.56	5.43
Building Construction 1 - 2018	3.51	23.79	28.56	0.07	4.75	2.05
Building Construction 1 - 2019	3.18	21.85	26.96	0.07	4.62	1.93
Building Construction 2 - 2019	2.30	12.98	20.13	0.06	4.07	1.42
Paving - 2019	1.57	15.52	15.85	0.03	1.07	0.85
Architectural Coating - 2019	27.83	0.19	2.51	0.01	0.63	0.17

WINTER	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
				lb/day		
Demolition -2018	4.61	59.21	24.42	0.08	5.19	2.90
Site Preparation - 2018	4.23	43.57	21.66	0.04	4.73	3.23
Grading - 2018	7.08	111.54	40.68	0.19	9.56	5.43
Building Construction 1 - 2018	3.66	23.90	27.32	0.07	4.75	2.05
Building Construction 1 - 2019	3.32	21.94	25.82	0.07	4.62	1.93
Building Construction 2 - 2019	2.43	13.08	18.98	0.06	4.07	1.42
Paving - 2019	1.58	15.53	15.77	0.02	1.07	0.85
Architectural Coating - 2019	27.86	0.21	2.28	0.01	0.63	0.17

Maximum	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
				lb/day		
Demolition -2018	4.61	59.21	24.50	0.08	5.19	2.90
Site Preparation - 2018	4.23	43.57	21.74	0.04	4.73	3.23
Grading - 2018	7.08	111.54	40.76	0.1913	9.56	5.43
Building Construction 1 - 2018	3.66	23.90	28.56	0.07	4.75	2.05
Building Construction 1 - 2019	3.32	21.94	26.96	0.07	4.62	1.93
Building Construction 2 - 2019	2.43	13.08	20.13	0.06	4.07	1.42
Paving - 2019	1.58	15.53	15.85	0.03	1.07	0.85
Architectural Coating - 2019	27.86	0.21	2.51	0.01	0.63	0.17

OVERLAP	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
				lb/day		
Demolition -2018	4.61	59.21	24.50	0.08	5.19	2.90
Site Preparation - 2018	4.23	43.57	21.74	0.04	4.73	3.23
Grading - 2018	7.08	111.54	40.76	0.19	9.56	5.43
Building Construction 1 - 2018	3.66	23.90	28.56	0.07	4.75	2.05
Building Construction 1 - 2019	3.32	21.94	26.96	0.07	4.62	1.93
Building Construction/Paving/Architectural Coating - 2019	32.76	37.68	45.32	0.10	6.32	2.95
Paving - 2019	1.58	15.53	15.77	0.02	1.07	0.85
Max Emission from phases	32.76	111.54	45.32	0.19	9.56	5.43
SCAQMD Significance Thresholds	75	100	550	150	150	55
Above/(Under)	(42.24)	11.54	(504.68)	(149.81)	(140.44)	(49.57)
Exceeds Thresholds?	No	Yes	No	No	No	No

Yucca Mixed EIR
Localized Construction Emissions without Mitigation Measures

SUMMER	NOx	CO	PM10 Total	PM2.5 Total
	lb/day			
Demolition -2018	36.105	19.0388	3.2099	1.9696
Site Preparation - 2018	43.4888	20.8351	4.5231	3.1730
Grading - 2018	43.9263	26.5368	4.1178	2.8002
Building Construction 1 - 2018	15.6866	12.383	1.0032	0.9439
Building Construction 1 - 2019	14.3928	12.2857	0.8893	0.8362
Building Construction 2 - 2019	5.5309	5.4501	0.3429	0.3335
Paving - 2019	15.4589	15.0399	0.8673	0.7979
Architectural Coating - 2019	0	0	0	0

WINTER	NOx	CO	PM10 Total	PM2.5 Total
	lb/day			
Demolition -2018	36.11	19.04	3.21	1.97
Site Preparation - 2018	43.49	20.84	4.52	3.17
Grading - 2018	43.93	26.54	4.12	2.80
Building Construction 1 - 2018	15.69	12.38	1.00	0.94
Building Construction 1 - 2019	14.39	12.29	0.89	0.84
Building Construction 2 - 2019	5.53	5.45	0.34	0.33
Paving - 2019	15.46	15.04	0.87	0.80
Architectural Coating - 2019	0.00	0.00	0.00	0.00

Maximum	NOx	CO	PM10 Total	PM2.5 Total
	lb/day			
Demolition -2018	36.11	19.04	3.21	1.97
Site Preparation - 2018	43.49	20.84	4.52	3.17
Grading - 2018	43.93	26.54	4.12	2.80
Building Construction 1 - 2018	15.69	12.38	1.00	0.94
Building Construction 1 - 2019	14.39	12.29	0.89	0.84
Building Construction 2 - 2019	5.53	5.45	0.34	0.33
Paving - 2019	15.46	15.04	0.87	0.80
Architectural Coating - 2019	0.00	0.00	0.00	0.00

OVERLAP	NOx	CO	PM10 Total	PM2.5 Total
	lb/day			
Demolition -2018	36.11	19.04	3.21	1.97
Site Preparation - 2018	43.49	20.84	4.52	3.17
Grading - 2018	43.93	26.54	4.12	2.80
Building Construction 1 - 2018	15.69	12.38	1.00	0.94
Building Construction 1 - 2019	14.39	12.29	0.89	0.84
Building Construction/Architectural Coating/Paving - 2019	29.85	27.33	1.76	1.63
Paving - 2019	15.46	15.04	0.87	0.80
Maximum From Phases	43.93	27.33	4.52	3.17
SCAQMD Significance Thresholds	79	739	5.5	3.3
Above/(Under)	(35.1)	(711.7)	(1.0)	(0.1)
Exceeds Thresholds?	No	No	No	No

Yucca Mixed EIR
Regional Construction Emissions with Mitigation Measures

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
SUMMER				lb/day		
Demolition -2018	1.56	24.77	24.07	0.08	3.31	1.18
Site Preparation - 2018	0.52	1.92	20.33	0.04	2.43	1.12
Grading - 2018	3.93	70.44	43.00	0.19	7.70	3.73
Building Construction 1 - 2018	2.07	9.03	29.32	0.07	3.78	1.14
Building Construction 1 - 2019	1.89	8.38	27.82	0.07	3.76	1.12
Building Construction 2 - 2019	1.77	7.86	20.49	0.06	3.74	1.10
Paving - 2019	0.37	1.28	18.17	0.03	0.24	0.09
Architectural Coating - 2019	27.83	0.19	2.51	0.01	0.63	0.17

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
WINTER				lb/day		
Demolition -2018	1.57	24.78	23.99	0.08	3.31	1.18
Site Preparation - 2018	0.53	1.92	20.25	0.04	2.43	1.12
Grading - 2018	3.94	70.45	42.91	0.19	7.70	3.73
Building Construction 1 - 2018	2.21	9.14	28.07	0.07	3.78	1.14
Building Construction 1 - 2019	2.03	8.47	26.67	0.07	3.76	1.12
Building Construction 2 - 2019	1.91	7.96	19.34	0.06	3.74	1.10
Paving - 2019	0.38	1.29	18.09	0.02	0.24	0.09
Architectural Coating - 2019	27.86	0.21	2.28	0.01	0.63	0.17

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Maximum				lb/day		
Demolition -2018	1.57	24.78	24.07	0.08	3.31	1.18
Site Preparation - 2018	0.53	1.92	20.33	0.04	2.43	1.12
Grading - 2018	3.94	70.45	43.00	0.1913	7.70	3.73
Building Construction 1 - 2018	2.21	9.14	29.32	0.07	3.78	1.14
Building Construction 1 - 2019	2.03	8.47	27.82	0.07	3.76	1.12
Building Construction 2 - 2019	1.91	7.96	20.49	0.06	3.74	1.10
Paving - 2019	0.38	1.29	18.17	0.03	0.24	0.09
Architectural Coating - 2019	27.86	0.21	2.51	0.01	0.63	0.17

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
OVERLAP				lb/day		
Demolition -2018	1.57	24.78	24.07	0.08	3.31	1.18
Site Preparation - 2018	0.53	1.92	20.33	0.04	2.43	1.12
Grading - 2018	3.94	70.45	43.00	0.19	7.70	3.73
Building Construction 1 - 2018	2.21	9.14	29.32	0.07	3.78	1.14
Building Construction 1 - 2019	2.03	8.47	27.82	0.07	3.76	1.12
Building Construction/Paving/Architectural Coating - 2019	30.26	9.97	48.49	0.10	4.63	1.38
Paving - 2019	0.38	1.29	18.09	0.02	0.24	0.09
Max Emission from phases	30.26	70.45	48.49	0.19	7.70	3.73
SCAQMD Significance Thresholds	75	100	550	150	150	55
Above/(Under)	(44.74)	(29.55)	(501.51)	(149.81)	(142.30)	(51.27)
Exceeds Thresholds?	No	No	No	No	No	No

Yucca Mixed EIR
Localized Construction Emissions with Mitigation Measures

SUMMER	NOx	CO	PM10 Total	PM2.5 Total
	lb/day			
Demolition -2018	1.6752	18.6114	1.3312	0.2453
Site Preparation - 2018	1.8476	19.4314	2.232	1.0698
Grading - 2018	2.8281	28.7682	2.2621	1.0999
Building Construction 1 - 2018	0.9234	13.1406	0.0284	0.0284
Building Construction 1 - 2019	0.9234	13.1406	0.0284	0.0284
Building Construction 2 - 2019	0.4085	5.8129	0.0126	0.0126
Paving - 2019	1.2199	17.3603	0.0375	0.0375
Architectural Coating - 2019	0.0000	0.0000	0.0000	0.0000

WINTER	NOx	CO	PM10 Total	PM2.5 Total
	lb/day			
Demolition -2018	1.68	18.61	1.33	0.25
Site Preparation - 2018	1.85	19.43	2.23	1.07
Grading - 2018	2.83	28.77	2.26	1.10
Building Construction 1 - 2018	0.92	13.14	0.03	0.03
Building Construction 1 - 2019	0.92	13.14	0.03	0.03
Building Construction 2 - 2019	0.41	5.81	0.01	0.01
Paving - 2019	1.22	17.36	0.04	0.04
Architectural Coating - 2019	0.00	0.00	0.00	0.00

Maximum	NOx	CO	PM10 Total	PM2.5 Total
	lb/day			
Demolition -2018	1.68	18.61	1.33	0.25
Site Preparation - 2018	1.85	19.43	2.23	1.07
Grading - 2018	2.83	28.77	2.26	1.10
Building Construction 1 - 2018	0.92	13.14	0.03	0.03
Building Construction 1 - 2019	0.92	13.14	0.03	0.03
Building Construction 2 - 2019	0.41	5.81	0.01	0.01
Paving - 2019	1.22	17.36	0.04	0.04
Architectural Coating - 2019	0.00	0.00	0.00	0.00

OVERLAP	NOx	CO	PM10 Total	PM2.5 Total
	lb/day			
Demolition -2018	1.68	18.61	1.33	0.25
Site Preparation - 2018	1.85	19.43	2.23	1.07
Grading - 2018	2.83	28.77	2.26	1.10
Building Construction 1 - 2018	0.92	13.14	0.03	0.03
Building Construction 1 - 2019	0.92	13.14	0.03	0.03
Building Construction/Architectural Coating/Paving - 2019	2.14	30.50	0.07	0.07
Paving - 2019	1.22	17.36	0.04	0.04
Maximum From Phases	2.83	30.50	2.26	1.10
SCAQMD Significance Thresholds	79	739	5.5	3.3
Above/(Under)	(76.2)	(708.5)	(3.2)	(2.2)
Exceeds Thresholds?	No	No	No	No

A-3 CalEEMod Output Files

6220 W Yucca Street Project - Construction

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	206.00	Space	0.10	89,222.00	0
Unenclosed Parking with Elevator	232.00	Space	0.10	100,483.00	0
City Park	0.60	Acre	0.10	18,535.00	0
Health Club	2.53	1000sqft	0.05	2,530.00	0
Hotel	136.00	Room	0.21	80,335.00	0
Quality Restaurant	9.05	1000sqft	0.10	9,050.00	0
Recreational Swimming Pool	4.84	1000sqft	0.10	4,840.00	0
Apartments High Rise	210.00	Dwelling Unit	0.35	242,285.00	601
Strip Mall	3.45	1000sqft	0.05	3,450.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2021
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	595	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor: California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects (Jan 2017).

Land Use - Multi-Fam (210 DU); Hotel (136 rooms); Retail (3.45 ksf); Rest. (9.05 ksf); Pool (4.84 ksf); Fitness (2.53 ksf); Open Space (25.905 ksf); Parking (~232 above, ~206 below). Pop.=2.03/DU (Hollywood CPA, 426 people).

Construction Phase - Refer to "Construction Schedule and California Emissions Estimator Model (CalEEMod) Inputs" worksheet.

Off-road Equipment - Refer to "Resource Loaded Construction Schedule" worksheet.

Off-road Equipment - Refer to "Resource Loaded Construction Schedule" worksheet.

Off-road Equipment - Refer to "Resource Loaded Construction Schedule" worksheet.

Off-road Equipment - Refer to "Resource Loaded Construction Schedule" worksheet.

Off-road Equipment - Refer to "Resource Loaded Construction Schedule" worksheet.

Off-road Equipment - Refer to "Resource Loaded Construction Schedule" worksheet.

Off-road Equipment - Refer to "Resource Loaded Construction Schedule" worksheet.

Trips and VMT - Refer to "Construction Schedule and California Emissions Estimator Model (CalEEMod) Inputs" worksheet.

Demolition -

Site Preparation - Site Preparation fugitive PM10 and PM2.5 levels were not quantified through CalEEMod as the CalEEMod user guide defines Site Preparation as clearing vegetation (grubbing and tree/stump removal) and removing stones and other unwanted material or debris prior to grading (Page 31 of CalEEMod User's Guide Version 2016.3.2). This definition of Site Preparation is not applicable to the Project, as the current Project Site is paved with minimal vegetation; therefore, the default CalEEMod Site Preparation emissions with respect to fugitive dust would not be representative of the Project Site. As a conservative assumption, the fugitive dust emissions for the Grading phase were applied to the Site Preparation phase. Pursuant to SCAQMD Rule 403 (Fugitive Dust), the Project would implement control strategies, such as watering, to reduce fugitive dust emissions from Site Preparation and Grading.

Grading -

Construction Off-road Equipment Mitigation - Tier 4 Equipment (for equipment 50 HP and greater); Water Unpaved Roads and Exposed Areas 3 X Daily; Limit On-Site Speed to 15 MPH or less.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	10.00	89.00
tblConstructionPhase	NumDays	200.00	281.00
tblConstructionPhase	NumDays	200.00	89.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	4.00	86.00
tblConstructionPhase	NumDays	10.00	87.00
tblConstructionPhase	NumDays	2.00	8.00
tblConstructionPhase	PhaseEndDate	7/3/2020	10/31/2019
tblConstructionPhase	PhaseEndDate	6/28/2019	6/30/2019
tblConstructionPhase	PhaseEndDate	1/19/2018	1/21/2018
tblConstructionPhase	PhaseEndDate	3/2/2020	12/31/2019
tblConstructionPhase	PhaseStartDate	3/3/2020	7/1/2019
tblConstructionPhase	PhaseStartDate	6/29/2019	7/1/2019
tblConstructionPhase	PhaseStartDate	11/1/2019	9/1/2019

tblConstructionPhase	PhaseStartDate	1/20/2018	1/22/2018
tblGrading	MaterialExported	0.00	120,000.00
tblLandUse	BuildingSpaceSquareFeet	82,400.00	89,222.00
tblLandUse	BuildingSpaceSquareFeet	92,800.00	100,483.00
tblLandUse	BuildingSpaceSquareFeet	197,472.00	80,335.00
tblLandUse	BuildingSpaceSquareFeet	210,000.00	242,285.00
tblLandUse	GreenSpaceSquareFeet	26,136.00	18,535.00
tblLandUse	LandUseSquareFeet	82,400.00	89,222.00
tblLandUse	LandUseSquareFeet	92,800.00	100,483.00
tblLandUse	LandUseSquareFeet	26,136.00	18,535.00
tblLandUse	LandUseSquareFeet	197,472.00	80,335.00
tblLandUse	LandUseSquareFeet	210,000.00	242,285.00
tblLandUse	LotAcreage	1.85	0.10
tblLandUse	LotAcreage	2.09	0.10
tblLandUse	LotAcreage	0.60	0.10
tblLandUse	LotAcreage	0.06	0.05
tblLandUse	LotAcreage	4.53	0.21
tblLandUse	LotAcreage	0.21	0.10
tblLandUse	LotAcreage	0.11	0.10
tblLandUse	LotAcreage	3.39	0.35
tblLandUse	LotAcreage	0.08	0.05
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	HaulingTripNumber	227.00	0.00
tblTripsAndVMT	HaulingTripNumber	11,865.00	0.00
tblTripsAndVMT	VendorTripNumber	73.00	0.00
tblTripsAndVMT	VendorTripNumber	73.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	18.00

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					
2018	4.2216	44.0034	27.5374	0.0554	16.0092	2.3496	18.3587	8.7427	2.1616	10.9043	0.0000	5,573.4168	5,573.4168	1.6675	0.0000	5,615.1051
2019	31.3839	22.1926	36.3468	0.0738	3.9569	1.2411	5.1980	1.0494	1.1600	2.2093	0.0000	7,299.0449	7,299.0449	0.9606	0.0000	7,323.0604
Maximum	**31.3839**	**44.0034**	**36.3468**	**0.0738**	**16.0092**	**2.3496**	**18.3587**	**8.7427**	**2.1616**	**10.9043**	**0.0000**	**7,299.0449**	**7,299.0449**	**1.6675**	**0.0000**	**7,323.0604**

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					
2018	1.7090	2.9051	29.7689	0.0554	6.3663	0.0888	6.4248	3.4422	0.0887	3.5006	0.0000	5,573.4168	5,573.4168	1.6675	0.0000	5,615.1051
2019	29.6543	2.8312	39.0300	0.0738	3.9569	0.0811	4.0380	1.0494	0.0786	1.1280	0.0000	7,299.0449	7,299.0449	0.9606	0.0000	7,323.0604
Maximum	**29.6543**	**2.9051**	**39.0300**	**0.0738**	**6.3663**	**0.0888**	**6.4248**	**3.4422**	**0.0887**	**3.5006**	**0.0000**	**7,299.0449**	**7,299.0449**	**1.6675**	**0.0000**	**7,323.0604**

	ROG	NOx	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	**11.91**	**91.33**	**-7.69**	**0.00**	**48.30**	**95.27**	**55.58**	**54.13**	**94.96**	**64.70**	**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	1/1/2018	1/21/2018	5	15	
2	Site Preparation	Site Preparation	1/22/2018	1/31/2018	5	8	
3	Grading	Grading	2/1/2018	5/31/2018	5	86	
4	Building Construction 1	Building Construction	6/1/2018	6/30/2019	5	281	
5	Building Construction 2	Building Construction	7/1/2019	10/31/2019	5	89	
6	Architectural Coating	Architectural Coating	7/1/2019	10/31/2019	5	89	
7	Paving	Paving	9/1/2019	12/31/2019	5	87	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 86

Acres of Paving: 0.2

Residential Indoor: 490,627; Residential Outdoor: 163,542; Non-Residential Indoor: 143,048; Non-Residential Outdoor: 47,683; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	3	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Bore/Drill Rigs	1	8.00	221	0.50
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Scrapers	1	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction 1	Cranes	0	6.00	231	0.29
Building Construction 1	Forklifts	3	6.00	89	0.20
Building Construction 1	Generator Sets	1	8.00	84	0.74
Building Construction 1	Other Construction Equipment	1	8.00	172	0.42
Building Construction 1	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction 1	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	2	6.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	0	6.00	78	0.48
Building Construction 2	Cranes	0	6.00	231	0.29
Building Construction 2	Forklifts	0	6.00	89	0.20

Building Construction 2	Generator Sets	1	8.00	84	0.74
Building Construction 2	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction 2	Welders	0	8.00	46	0.45

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	18.00	0.00	0.00	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 1	6	280.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	56.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 2	2	280.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.2812	0.0000	3.2812	0.4968	0.0000	0.4968			0.0000			0.0000
Off-Road	3.4197	36.1050	19.0388	0.0316		1.9302	1.9302		1.7758	1.7758		3,178.2596	3,178.2596	0.9894		3,202.9955
Total	**3.4197**	**36.1050**	**19.0388**	**0.0316**	**3.2812**	**1.9302**	**5.2114**	**0.4968**	**1.7758**	**2.2726**		**3,178.2596**	**3,178.2596**	**0.9894**		**3,202.9955**

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					
Worker	0.0962	0.0693	0.9006	2.2000e-003	0.2012	1.6100e-003	0.2028	0.0534	1.4900e-003	0.0549		219.3696	219.3696	7.5000e-003		219.5571

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					1.2797	0.0000	1.2797	0.1938	0.0000	0.1938			0.0000			0.0000
Off-Road	0.3866	1.6752	18.6114	0.0316		0.0515	0.0515		0.0515	0.0515	0.0000	3,178.2596	3,178.2596	0.9894		3,202.9955
Total	**0.3866**	**1.6752**	**18.6114**	**0.0316**	**1.2797**	**0.0515**	**1.3312**	**0.1938**	**0.0515**	**0.2453**	**0.0000**	**3,178.2596**	**3,178.2596**	**0.9894**		**3,202.9955**

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					
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

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.1254	43.4888	20.8351	0.0348		2.3480	2.3480		2.1601	2.1601		3,509.0589	3,509.0589	1.0924		3,536.3693

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					
Worker	0.0962	0.0693	0.9006	2.2000e-003	0.2012	1.6100e-003	0.2028	0.0534	1.4900e-003	0.0549		219.3696	219.3696	7.5000e-003		219.5571

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4264	1.8476	19.4314	0.0348		0.0569	0.0569		0.0569	0.0569	0.0000	3,509.0589	3,509.0589	1.0924		3,536.3693

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					
Worker	0.0962	0.0693	0.9006	2.2000e-003	0.2012	1.6100e-003	0.2028	0.0534	1.4900e-003	0.0549		219.3696	219.3696	7.5000e-003		219.5571

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.5771	0.0000	5.5771	2.5972	0.0000	2.5972			0.0000			0.0000
Off-Road	3.7965	43.9263	26.5368	0.0530		1.9427	1.9427		1.7873	1.7873		5,329.6728	5,329.6728	1.6592		5,371.1528
Total	**3.7965**	**43.9263**	**26.5368**	**0.0530**	**5.5771**	**1.9427**	**7.5198**	**2.5972**	**1.7873**	**4.3845**		**5,329.6728**	**5,329.6728**	**1.6592**		**5,371.1528**

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					
Worker	0.1069	0.0770	1.0006	2.4500e-003	0.2236	1.7900e-003	0.2254	0.0593	1.6500e-003	0.0609		243.7440	243.7440	8.3300e-003		243.9523

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					2.1751	0.0000	2.1751	1.0129	0.0000	1.0129			0.0000			0.0000
Off-Road	0.6526	2.8281	28.7682	0.0530		0.0870	0.0870		0.0870	0.0870	0.0000	5,329.6728	5,329.6728	1.6592		5,371.1528
Total	**0.6526**	**2.8281**	**28.7682**	**0.0530**	**2.1751**	**0.0870**	**2.2621**	**1.0129**	**0.0870**	**1.0999**	**0.0000**	**5,329.6728**	**5,329.6728**	**1.6592**		**5,371.1528**

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					
Worker	0.1069	0.0770	1.0006	2.4500e-003	0.2236	1.7900e-003	0.2254	0.0593	1.6500e-003	0.0609		243.7440	243.7440	8.3300e-003		243.9523

3.5 Building Construction 1 - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6619	15.6866	12.3830	0.0185		1.0032	1.0032		0.9439	0.9439		1,825.3792	1,825.3792	0.4193		1,835.8606
Total	**1.6619**	**15.6866**	**12.3830**	**0.0185**		**1.0032**	**1.0032**		**0.9439**	**0.9439**		**1,825.3792**	**1,825.3792**	**0.4193**		**1,835.8606**

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					
Worker	1.4959	1.0785	14.0085	0.0343	3.1297	0.0251	3.1548	0.8300	0.0231	0.8532		3,412.4163	3,412.4163	0.1166		3,415.3320

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2131	0.9234	13.1406	0.0185		0.0284	0.0284		0.0284	0.0284	0.0000	1,825.3792	1,825.3792	0.4193		1,835.8606
Total	**0.2131**	**0.9234**	**13.1406**	**0.0185**		**0.0284**	**0.0284**		**0.0284**	**0.0284**	**0.0000**	**1,825.3792**	**1,825.3792**	**0.4193**		**1,835.8606**

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					
Worker	1.4959	1.0785	14.0085	0.0343	3.1297	0.0251	3.1548	0.8300	0.0231	0.8532		3,412.4163	3,412.4163	0.1166		3,415.3320

3.5 Building Construction 1 - 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	1.5035	14.3928	12.2857	0.0185		0.8893	0.8893		0.8362	0.8362		1,806.3033	1,806.3033	0.4138		1,816.6493
Total	**1.5035**	**14.3928**	**12.2857**	**0.0185**		**0.8893**	**0.8893**		**0.8362**	**0.8362**		**1,806.3033**	**1,806.3033**	**0.4138**		**1,816.6493**

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					
Worker	1.3594	0.9514	12.5421	0.0332	3.1297	0.0245	3.1542	0.8300	0.0226	0.8526		3,305.0121	3,305.0121	0.1036		3,307.6018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2131	0.9234	13.1406	0.0185		0.0284	0.0284		0.0284	0.0284	0.0000	1,806.3033	1,806.3033	0.4138		1,816.6493

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					
Worker	1.3594	0.9514	12.5421	0.0332	3.1297	0.0245	3.1542	0.8300	0.0226	0.8526		3,305.0121	3,305.0121	0.1036		3,307.6018

3.6 Building Construction 2 - 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	0.6186	5.5309	5.4501	8.9100e-003		0.3429	0.3429		0.3335	0.3335		853.6910	853.6910	0.1124		856.5021
Total	**0.6186**	**5.5309**	**5.4501**	**8.9100e-003**		**0.3429**	**0.3429**		**0.3335**	**0.3335**		**853.6910**	**853.6910**	**0.1124**		**856.5021**

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					
Worker	1.3594	0.9514	12.5421	0.0332	3.1297	0.0245	3.1542	0.8300	0.0226	0.8526		3,305.0121	3,305.0121	0.1036		3,307.6018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0943	0.4085	5.8129	8.9100e-003		0.0126	0.0126		0.0126	0.0126	0.0000	853.6910	853.6910	0.1124		856.5021
Total	**0.0943**	**0.4085**	**5.8129**	**8.9100e-003**		**0.0126**	**0.0126**		**0.0126**	**0.0126**	**0.0000**	**853.6910**	**853.6910**	**0.1124**		**856.5021**

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					
Worker	1.3594	0.9514	12.5421	0.0332	3.1297	0.0245	3.1542	0.8300	0.0226	0.8526		3,305.0121	3,305.0121	0.1036		3,307.6018

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	27.5599					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**27.5599**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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					
Worker	0.2719	0.1903	2.5084	6.6400e-003	0.6260	4.9000e-003	0.6309	0.1660	4.5100e-003	0.1705		661.0024	661.0024	0.0207		661.5204

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	27.5599					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**27.5599**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive 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					
Worker	0.2719	0.1903	2.5084	6.6400e-003	0.6260	4.9000e-003	0.6309	0.1660	4.5100e-003	0.1705		661.0024	661.0024	0.0207		661.5204

3.8 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4867	15.4589	15.0399	0.0229		0.8673	0.8673		0.7979	0.7979		2,266.8743	2,266.8743	0.7172		2,284.8047
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4867**	**15.4589**	**15.0399**	**0.0229**		**0.8673**	**0.8673**		**0.7979**	**0.7979**		**2,266.8743**	**2,266.8743**	**0.7172**		**2,284.8047**

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					
Worker	0.0874	0.0612	0.8063	2.1300e-003	0.2012	1.5700e-003	0.2028	0.0534	1.4500e-003	0.0548		212.4651	212.4651	6.6600e-003		212.6315

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2815	1.2199	17.3603	0.0229		0.0375	0.0375		0.0375	0.0375	0.0000	2,266.8743	2,266.8743	0.7172		2,284.8047
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2815**	**1.2199**	**17.3603**	**0.0229**		**0.0375**	**0.0375**		**0.0375**	**0.0375**	**0.0000**	**2,266.8743**	**2,266.8743**	**0.7172**		**2,284.8047**

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					
Worker	0.0874	0.0612	0.8063	2.1300e-003	0.2012	1.5700e-003	0.2028	0.0534	1.4500e-003	0.0548		212.4651	212.4651	6.6600e-003		212.6315

6220 W Yucca Street Project - Construction

South Coast Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	206.00	Space	0.10	89,222.00	0
Unenclosed Parking with Elevator	232.00	Space	0.10	100,483.00	0
City Park	0.60	Acre	0.10	18,535.00	0
Health Club	2.53	1000sqft	0.05	2,530.00	0
Hotel	136.00	Room	0.21	80,335.00	0
Quality Restaurant	9.05	1000sqft	0.10	9,050.00	0
Recreational Swimming Pool	4.84	1000sqft	0.10	4,840.00	0
Apartments High Rise	210.00	Dwelling Unit	0.35	242,285.00	601
Strip Mall	3.45	1000sqft	0.05	3,450.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2021
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	595	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor: California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects (Jan 2017).

Land Use - Multi-Fam (210 DU); Hotel (136 rooms); Retail (3.45 ksf); Rest. (9.05 ksf); Pool (4.84 ksf); Fitness (2.53 ksf); Open Space (25.905 ksf); Parking (~232 above, ~206 below). Pop.=2.03/DU (Hollywood CPA, 426 people).
Construction Phase - Refer to "Construction Schedule and California Emissions Estimator Model (CalEEMod) Inputs" worksheet.

Off-road Equipment - Refer to "Resource Loaded Construction Schedule" worksheet.

Off-road Equipment - Refer to "Resource Loaded Construction Schedule" worksheet.

Off-road Equipment - Refer to "Resource Loaded Construction Schedule" worksheet.

Off-road Equipment - Refer to "Resource Loaded Construction Schedule" worksheet.

Off-road Equipment - Refer to "Resource Loaded Construction Schedule" worksheet.

Off-road Equipment - Refer to "Resource Loaded Construction Schedule" worksheet.

Off-road Equipment - Refer to "Resource Loaded Construction Schedule" worksheet.

Trips and VMT - Refer to "Construction Schedule and California Emissions Estimator Model (CalEEMod) Inputs" worksheet.

Demolition -

Site Preparation - Site Preparation fugitive PM10 and PM2.5 levels were not quantified through CalEEMod as the CalEEMod user guide defines Site Preparation as clearing vegetation (grubbing and tree/stump removal) and removing stones and other unwanted material or debris prior to grading (Page 31 of CalEEMod User's Guide Version 2016.3.2). This definition of Site Preparation is not applicable to the Project, as the current Project Site is paved with minimal vegetation; therefore, the default CalEEMod Site Preparation emissions with respect to fugitive dust would not be representative of the Project Site. As a conservative assumption, the fugitive dust emissions for the Grading phase were applied to the Site Preparation phase. Pursuant to SCAQMD Rule 403 (Fugitive Dust), the Project would implement control strategies, such as watering, to reduce fugitive dust emissions from Site Preparation and Grading.

Grading -

Construction Off-road Equipment Mitigation - Tier 4 Equipment (for equipment 50 HP and greater); Water Unpaved Roads and Exposed Areas 3 X Daily; Limit On-Site Speed to 15 MPH or less.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	10.00	89.00
tblConstructionPhase	NumDays	200.00	281.00
tblConstructionPhase	NumDays	200.00	89.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	4.00	86.00
tblConstructionPhase	NumDays	10.00	87.00
tblConstructionPhase	NumDays	2.00	8.00
tblConstructionPhase	PhaseEndDate	7/3/2020	10/31/2019
tblConstructionPhase	PhaseEndDate	6/28/2019	6/30/2019
tblConstructionPhase	PhaseEndDate	1/19/2018	1/21/2018
tblConstructionPhase	PhaseEndDate	3/2/2020	12/31/2019
tblConstructionPhase	PhaseStartDate	3/3/2020	7/1/2019
tblConstructionPhase	PhaseStartDate	6/29/2019	7/1/2019
tblConstructionPhase	PhaseStartDate	11/1/2019	9/1/2019

tblConstructionPhase	PhaseStartDate	1/20/2018	1/22/2018
tblGrading	MaterialExported	0.00	120,000.00
tblLandUse	BuildingSpaceSquareFeet	82,400.00	89,222.00
tblLandUse	BuildingSpaceSquareFeet	92,800.00	100,483.00
tblLandUse	BuildingSpaceSquareFeet	197,472.00	80,335.00
tblLandUse	BuildingSpaceSquareFeet	210,000.00	242,285.00
tblLandUse	GreenSpaceSquareFeet	26,136.00	18,535.00
tblLandUse	LandUseSquareFeet	82,400.00	89,222.00
tblLandUse	LandUseSquareFeet	92,800.00	100,483.00
tblLandUse	LandUseSquareFeet	26,136.00	18,535.00
tblLandUse	LandUseSquareFeet	197,472.00	80,335.00
tblLandUse	LandUseSquareFeet	210,000.00	242,285.00
tblLandUse	LotAcreage	1.85	0.10
tblLandUse	LotAcreage	2.09	0.10
tblLandUse	LotAcreage	0.60	0.10
tblLandUse	LotAcreage	0.06	0.05
tblLandUse	LotAcreage	4.53	0.21
tblLandUse	LotAcreage	0.21	0.10
tblLandUse	LotAcreage	0.11	0.10
tblLandUse	LotAcreage	3.39	0.35
tblLandUse	LotAcreage	0.08	0.05
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	HaulingTripNumber	227.00	0.00
tblTripsAndVMT	HaulingTripNumber	11,865.00	0.00
tblTripsAndVMT	VendorTripNumber	73.00	0.00
tblTripsAndVMT	VendorTripNumber	73.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	18.00

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					
2018	4.2309	44.0110	27.4486	0.0553	16.0092	2.3496	18.3587	8.7427	2.1616	10.9043	0.0000	5,558.3233	5,558.3233	1.6670	0.0000	5,599.9990
2019	31.5527	22.3114	34.8967	0.0712	3.9569	1.2411	5.1980	1.0494	1.1600	2.2093	0.0000	7,039.9377	7,039.9377	0.9525	0.0000	7,063.7513
Maximum	**31.5527**	**44.0110**	**34.8967**	**0.0712**	**16.0092**	**2.3496**	**18.3587**	**8.7427**	**2.1616**	**10.9043**	**0.0000**	**7,039.9377**	**7,039.9377**	**1.6670**	**0.0000**	**7,063.7513**

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					
2018	1.8535	2.9127	29.6801	0.0553	6.3663	0.0888	6.4248	3.4422	0.0887	3.5006	0.0000	5,558.3233	5,558.3233	1.6670	0.0000	5,599.9990
2019	29.8231	2.9500	37.5800	0.0712	3.9569	0.0811	4.0380	1.0494	0.0786	1.1280	0.0000	7,039.9377	7,039.9377	0.9525	0.0000	7,063.7513
Maximum	**29.8231**	**2.9500**	**37.5800**	**0.0712**	**6.3663**	**0.0888**	**6.4248**	**3.4422**	**0.0887**	**3.5006**	**0.0000**	**7,039.9377**	**7,039.9377**	**1.6670**	**0.0000**	**7,063.7513**

	ROG	NOx	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	**11.48**	**91.16**	**-7.88**	**0.00**	**48.30**	**95.27**	**55.58**	**54.13**	**94.96**	**64.70**	**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	1/1/2018	1/21/2018	5	15	
2	Site Preparation	Site Preparation	1/22/2018	1/31/2018	5	8	
3	Grading	Grading	2/1/2018	5/31/2018	5	86	
4	Building Construction 1	Building Construction	6/1/2018	6/30/2019	5	281	
5	Building Construction 2	Building Construction	7/1/2019	10/31/2019	5	89	
6	Architectural Coating	Architectural Coating	7/1/2019	10/31/2019	5	89	
7	Paving	Paving	9/1/2019	12/31/2019	5	87	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 86

Acres of Paving: 0.2

Residential Indoor: 490,627; Residential Outdoor: 163,542; Non-Residential Indoor: 143,048; Non-Residential Outdoor: 47,683; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	3	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Bore/Drill Rigs	1	8.00	221	0.50
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Scrapers	1	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction 1	Cranes	0	6.00	231	0.29
Building Construction 1	Forklifts	3	6.00	89	0.20
Building Construction 1	Generator Sets	1	8.00	84	0.74
Building Construction 1	Other Construction Equipment	1	8.00	172	0.42
Building Construction 1	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction 1	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	2	6.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Architectural Coating	Air Compressors	0	6.00	78	0.48
Building Construction 2	Cranes	0	6.00	231	0.29
Building Construction 2	Forklifts	0	6.00	89	0.20
Building Construction 2	Generator Sets	1	8.00	84	0.74
Building Construction 2	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction 2	Welders	0	8.00	46	0.45

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	18.00	0.00	0.00	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 1	6	280.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	56.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 2	2	280.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.2812	0.0000	3.2812	0.4968	0.0000	0.4968			0.0000			0.0000
Off-Road	3.4197	36.1050	19.0388	0.0316		1.9302	1.9302		1.7758	1.7758		3,178.2596	3,178.2596	0.9894		3,202.9955
Total	**3.4197**	**36.1050**	**19.0388**	**0.0316**	**3.2812**	**1.9302**	**5.2114**	**0.4968**	**1.7758**	**2.2726**		**3,178.2596**	**3,178.2596**	**0.9894**		**3,202.9955**

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					
Worker	0.1055	0.0762	0.8206	2.0700e-003	0.2012	1.6100e-003	0.2028	0.0534	1.4900e-003	0.0549		205.7855	205.7855	7.0500e-003		205.9616

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					1.2797	0.0000	1.2797	0.1938	0.0000	0.1938			0.0000			0.0000
Off-Road	0.3866	1.6752	18.6114	0.0316		0.0515	0.0515		0.0515	0.0515	0.0000	3,178.2596	3,178.2596	0.9894		3,202.9955
Total	**0.3866**	**1.6752**	**18.6114**	**0.0316**	**1.2797**	**0.0515**	**1.3312**	**0.1938**	**0.0515**	**0.2453**	**0.0000**	**3,178.2596**	**3,178.2596**	**0.9894**		**3,202.9955**

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	0.1055	0.0762	0.8206	2.0700e-003	0.2012	1.6100e-003	0.2028	0.0534	1.4900e-003	0.0549		205.7855	205.7855	7.0500e-003		205.9616
Total	**0.1055**	**0.0762**	**0.8206**	**2.0700e-003**	**0.2012**	**1.6100e-003**	**0.2028**	**0.0534**	**1.4900e-003**	**0.0549**		**205.7855**	**205.7855**	**7.0500e-003**		**205.9616**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.1254	43.4888	20.8351	0.0348		2.3480	2.3480		2.1601	2.1601		3,509.0589	3,509.0589	1.0924		3,536.3693

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					

Worker	0.1055	0.0762	0.8206	2.0700e-003	0.2012	1.6100e-003	0.2028	0.0534	1.4900e-003	0.0549		205.7855	205.7855	7.0500e-003		205.9616

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4264	1.8476	19.4314	0.0348		0.0569	0.0569		0.0569	0.0569	0.0000	3,509.0589	3,509.0589	1.0924		3,536.3693

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					
Worker	0.1055	0.0762	0.8206	2.0700e-003	0.2012	1.6100e-003	0.2028	0.0534	1.4900e-003	0.0549		205.7855	205.7855	7.0500e-003		205.9616

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.5771	0.0000	5.5771	2.5972	0.0000	2.5972			0.0000			0.0000
Off-Road	3.7965	43.9263	26.5368	0.0530		1.9427	1.9427		1.7873	1.7873		5,329.6728	5,329.6728	1.6592		5,371.1528
Total	**3.7965**	**43.9263**	**26.5368**	**0.0530**	**5.5771**	**1.9427**	**7.5198**	**2.5972**	**1.7873**	**4.3845**		**5,329.6728**	**5,329.6728**	**1.6592**		**5,371.1528**

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					
Worker	0.1172	0.0847	0.9118	2.3000e-003	0.2236	1.7900e-003	0.2254	0.0593	1.6500e-003	0.0609		228.6505	228.6505	7.8300e-003		228.8463

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					2.1751	0.0000	2.1751	1.0129	0.0000	1.0129			0.0000			0.0000
Off-Road	0.6526	2.8281	28.7682	0.0530		0.0870	0.0870		0.0870	0.0870	0.0000	5,329.6728	5,329.6728	1.6592		5,371.1528
Total	**0.6526**	**2.8281**	**28.7682**	**0.0530**	**2.1751**	**0.0870**	**2.2621**	**1.0129**	**0.0870**	**1.0999**	**0.0000**	**5,329.6728**	**5,329.6728**	**1.6592**		**5,371.1528**

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					
Worker	0.1172	0.0847	0.9118	2.3000e-003	0.2236	1.7900e-003	0.2254	0.0593	1.6500e-003	0.0609		228.6505	228.6505	7.8300e-003		228.8463

3.5 Building Construction 1 - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6619	15.6866	12.3830	0.0185		1.0032	1.0032		0.9439	0.9439		1,825.3792	1,825.3792	0.4193		1,835.8606
Total	**1.6619**	**15.6866**	**12.3830**	**0.0185**		**1.0032**	**1.0032**		**0.9439**	**0.9439**		**1,825.3792**	**1,825.3792**	**0.4193**		**1,835.8606**

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					
Worker	1.6404	1.1851	12.7655	0.0322	3.1297	0.0251	3.1548	0.8300	0.0231	0.8532		3,201.1071	3,201.1071	0.1096		3,203.8478

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2131	0.9234	13.1406	0.0185		0.0284	0.0284		0.0284	0.0284	0.0000	1,825.3792	1,825.3792	0.4193		1,835.8606

Total	**0.2131**	**0.9234**	**13.1406**	**0.0185**		**0.0284**	**0.0284**		**0.0284**	**0.0284**	**0.0000**	**1,825.3792**	**1,825.3792**	**0.4193**		**1,835.8606**

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					
Worker	1.6404	1.1851	12.7655	0.0322	3.1297	0.0251	3.1548	0.8300	0.0231	0.8532		3,201.1071	3,201.1071	0.1096		3,203.8478

3.5 Building Construction 1 - 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	1.5035	14.3928	12.2857	0.0185		0.8893	0.8893		0.8362	0.8362		1,806.3033	1,806.3033	0.4138		1,816.6493
Total	**1.5035**	**14.3928**	**12.2857**	**0.0185**		**0.8893**	**0.8893**		**0.8362**	**0.8362**		**1,806.3033**	**1,806.3033**	**0.4138**		**1,816.6493**

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					
Worker	1.4929	1.0453	11.3952	0.0311	3.1297	0.0245	3.1542	0.8300	0.0226	0.8526		3,100.0686	3,100.0686	0.0972		3,102.4985

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2131	0.9234	13.1406	0.0185		0.0284	0.0284		0.0284	0.0284	0.0000	1,806.3033	1,806.3033	0.4138		1,816.6493
Total	**0.2131**	**0.9234**	**13.1406**	**0.0185**		**0.0284**	**0.0284**		**0.0284**	**0.0284**	**0.0000**	**1,806.3033**	**1,806.3033**	**0.4138**		**1,816.6493**

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					
Worker	1.4929	1.0453	11.3952	0.0311	3.1297	0.0245	3.1542	0.8300	0.0226	0.8526		3,100.0686	3,100.0686	0.0972		3,102.4985

3.6 Building Construction 2 - 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	0.6186	5.5309	5.4501	8.9100e-003		0.3429	0.3429		0.3335	0.3335		853.6910	853.6910	0.1124		856.5021
Total	**0.6186**	**5.5309**	**5.4501**	**8.9100e-003**		**0.3429**	**0.3429**		**0.3335**	**0.3335**		**853.6910**	**853.6910**	**0.1124**		**856.5021**

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					
Worker	1.4929	1.0453	11.3952	0.0311	3.1297	0.0245	3.1542	0.8300	0.0226	0.8526		3,100.0686	3,100.0686	0.0972		3,102.4985

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0943	0.4085	5.8129	8.9100e-003		0.0126	0.0126		0.0126	0.0126	0.0000	853.6910	853.6910	0.1124		856.5021
Total	**0.0943**	**0.4085**	**5.8129**	**8.9100e-003**		**0.0126**	**0.0126**		**0.0126**	**0.0126**	**0.0000**	**853.6910**	**853.6910**	**0.1124**		**856.5021**

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					
Worker	1.4929	1.0453	11.3952	0.0311	3.1297	0.0245	3.1542	0.8300	0.0226	0.8526		3,100.0686	3,100.0686	0.0972		3,102.4985

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	27.5599					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**27.5599**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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					
Worker	0.2986	0.2091	2.2790	6.2300e-003	0.6260	4.9000e-003	0.6309	0.1660	4.5100e-003	0.1705		620.0137	620.0137	0.0194		620.4997

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	27.5599					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**27.5599**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive 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					
Worker	0.2986	0.2091	2.2790	6.2300e-003	0.6260	4.9000e-003	0.6309	0.1660	4.5100e-003	0.1705		620.0137	620.0137	0.0194		620.4997

3.8 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4867	15.4589	15.0399	0.0229		0.8673	0.8673		0.7979	0.7979		2,266.8743	2,266.8743	0.7172		2,284.8047
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4867**	**15.4589**	**15.0399**	**0.0229**		**0.8673**	**0.8673**		**0.7979**	**0.7979**		**2,266.8743**	**2,266.8743**	**0.7172**		**2,284.8047**

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					
Worker	0.0960	0.0672	0.7326	2.0000e-003	0.2012	1.5700e-003	0.2028	0.0534	1.4500e-003	0.0548		199.2901	199.2901	6.2500e-003		199.4463

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2815	1.2199	17.3603	0.0229		0.0375	0.0375		0.0375	0.0375	0.0000	2,266.8743	2,266.8743	0.7172		2,284.8047
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2815**	**1.2199**	**17.3603**	**0.0229**		**0.0375**	**0.0375**		**0.0375**	**0.0375**	**0.0000**	**2,266.8743**	**2,266.8743**	**0.7172**		**2,284.8047**

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					
Worker	0.0960	0.0672	0.7326	2.0000e-003	0.2012	1.5700e-003	0.2028	0.0534	1.4500e-003	0.0548		199.2901	199.2901	6.2500e-003		199.4463

A-4 EMFAC2017 Construction Truck Emissions

Yucca
On-Road Construction Truck Regional Emissions

Construction Phase	Start Date	End Date	No. Work Days	Soil/ Material Export (CY) [a]	Soil/ Material Import (CY) [b]	Soil/ Material Haul Truck Capacity (CY)	Soil/ Material Haul Truck Total One-Way Trips	Soil/ Material Haul Truck Daily One-Way Trips	Vendor One-Way Trips/Max Day	Haul or Vendor Days per Phase	One-Way Trip Distance (miles)
Demolition-Haul	1/1/2018	1/21/2018	15	5,000		10	1,000	67		15	20.0
Demolition-Vendor	1/1/2018	1/21/2018	15						6	15	6.9
Grading/Excavation-Haul	2/1/2018	5/31/2018	86	120,000		14	17,200	200		86	20.0
Grading/Excavation-Vendor	2/1/2018	5/31/2018	86						6	86	6.9
Building Construction 1-2018	6/1/2018	12/31/2018	152						73	152	6.9
Building Construction 1-2019	1/1/2019	6/30/2019	129						73	129	6.9
Building Construction 2	7/1/2019	10/31/2019	89						73	89	6.9

Notes:

a. Vendor trips are associated with the Building Construction phase and are based on CalEEMod assumptions.

Source: 6220 West Yucca Design Plans, prepared by Togawa Smith Martin 2016.

Yucca
On-Road Construction Truck Regional Emissions

On-Road Truck Regional Running Emissions

Construction Phase	Source	Year	Daily One-Way Truck Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Running Emissions Factor (grams/mile)						Regional Emissions (pounds/day)					
							ROG	NOX	CO	SO2	PM10	PM2.5	ROG	NOX	CO	SO2	PM10	PM2.5
Demolition-Haul	T7 Single Construction	2018	67	15.00	8	20	0.3256	7.1957	1.2469	0.0148	0.1856	0.1776	0.96	21.26	3.68	0.04	0.55	0.52
Demolition-Vendor	MHDT/HHDT	2018	6	15.00	8	6.9	0.2055	4.5952	0.7262	0.0121	0.1104	0.1056	0.02	0.42	0.07	0.00	0.01	0.01
Grading/Excavation-Haul	T7 Single Construction	2018	200	86.00	8	20	0.3256	7.1957	1.2469	0.0148	0.1856	0.1776	2.87	63.46	11.00	0.13	1.64	1.57
Grading/Excavation-Vendor	MHDT/HHDT	2018	6	86.00	8	6.9	0.2055	4.5952	0.7262	0.0121	0.1104	0.1056	0.02	0.42	0.07	0.00	0.01	0.01
Building Construction 1-2018	MHDT/HHDT	2018	73	152.00	8	6.9	0.2055	4.5952	0.7262	0.0121	0.1104	0.1056	0.23	5.10	0.81	0.01	0.12	0.12
Building Construction 1-2019	MHDT/HHDT	2019	73	129.00	8	6.9	0.1727	4.1479	0.6220	0.0119	0.0933	0.0893	0.19	4.61	0.69	0.01	0.10	0.10
Building Construction 2	MHDT/HHDT	2019	73	89.00	8	6.9	0.1727	4.1479	0.6220	0.0119	0.0933	0.0893	0.19	4.61	0.69	0.01	0.10	0.10

On-Road Truck Idling Emissions

Construction Phase	Source	Year	Daily Number of Trucks	Haul Days per Year (days/year)	Work Hours per Day (hours/day)	Idling Time per Truck (minutes)	Idling Emissions Factor (grams/min)						Regional Emissions (pounds/day)					
							ROG	NOX	CO	SO2	PM10	PM2.5	ROG	NOX	CO	SO2	PM10	PM2.5
Demolition-Haul	T7 Single Construction	2018	34	15.00	8	15	0.0803	1.0593	0.6211	0.0012	0.0072	0.0069	0.0903	1.1910	0.6983	0.0013	0.0081	0.0078
Demolition-Vendor	MHDT/HHDT	2018	3	15.00	8	15	0.1047	1.5730	1.1120	0.0024	0.0057	0.0055	0.0104	0.1561	0.1103	0.0002	0.0006	0.0005
Grading/Excavation-Haul	T7 Single Construction	2018	100	86.00	8	15	0.0803	1.0593	0.6211	0.0012	0.0072	0.0069	0.2656	3.5030	2.0538	0.0039	0.0239	0.0229
Grading/Excavation-Vendor	MHDT/HHDT	2018	3	86.00	8	15	0.1047	1.5730	1.1120	0.0024	0.0057	0.0055	0.0104	0.1561	0.1103	0.0002	0.0006	0.0005
Building Construction 1-2018	MHDT/HHDT	2018	37	152.00	8	15	0.1047	1.5730	1.1120	0.0024	0.0057	0.0055	0.1281	1.9247	1.3606	0.0029	0.0070	0.0067
Building Construction 1-2019	MHDT/HHDT	2019	37	129.00	8	15	0.1044	1.5497	1.1816	0.0024	0.0048	0.0046	0.1278	1.8962	1.4457	0.0029	0.0058	0.0056
Building Construction 2	MHDT/HHDT	2019	37	89.00	8	15	0.1044	1.5497	1.1816	0.0024	0.0048	0.0046	0.1278	1.8962	1.4457	0.0029	0.0058	0.0056

On-Road Truck Fugitive Dust Emissions (Paved Road Dust (RD), Break Wear (BW), Tire Wear (TW))

Construction Phase	Source	Year	Daily One-Way Truck Trips	Work Days per Year (days/year)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Fugitive Dust Emissions Factor (grams/mile)						Regional Emissions (pounds/day)					
							PM10 RD	PM10 BW	PM10 TW	PM2.5 RD	PM2.5 BW	PM2.5 TW	PM10 RD	PM10 BW	PM10 TW	PM2.5 RD	PM2.5 BW	PM2.5 TW
Demolition-Haul	T7 Single Construction	2018	67	15	8	20	0.2998	0.0617	0.0360	0.0736	0.0265	0.0090	0.8858	0.1824	0.1064	0.2174	0.0782	0.0266
Demolition-Vendor	MHDT/HHDT	2018	6	15	8	6.9	0.2998	0.0956	0.0237	0.0736	0.0410	0.0059	0.0274	0.0087	0.0022	0.0067	0.0037	0.0005
Grading/Excavation-Haul	T7 Single Construction	2018	200	86	8	20	0.2998	0.0617	0.0360	0.0736	0.0265	0.0090	2.6442	0.5445	0.3175	0.6490	0.2333	0.0794
Grading/Excavation-Vendor	MHDT/HHDT	2018	6	86	8	6.9	0.2998	0.0956	0.0237	0.0736	0.0410	0.0059	0.0274	0.0087	0.0022	0.0067	0.0037	0.0005
Building Construction 1-2018	MHDT/HHDT	2018	73	152	8	6.9	0.2998	0.0956	0.0237	0.0736	0.0410	0.0059	0.3330	0.1062	0.0264	0.0817	0.0455	0.0066
Building Construction 1-2019	MHDT/HHDT	2019	73	129	8	6.9	0.2998	0.0956	0.0237	0.0736	0.0410	0.0059	0.3330	0.1062	0.0264	0.0817	0.0455	0.0066
Building Construction 2	MHDT/HHDT	2019	73	89	8	6.9	0.2998	0.0956	0.0237	0.0736	0.0410	0.0059	0.3330	0.1062	0.0264	0.0817	0.0455	0.0066

Summary of On-Road Truck Regional Emissions

Construction Phase	Source	Year	Regional Emissions (pounds/day)									
			ROG	NOX	CO	SO2	PM10 Dust	PM10 Exh	PM10 Total	PM2.5 Dust	PM2.5 Exh	PM2.5 Total
Demolition-Haul	T7 Single Construction	2018	1.05	22.45	4.38	0.05	1.17	0.56	1.73	0.32	0.53	0.85
Demolition-Vendor	MHDT/HHDT	2018	0.03	0.58	0.18	0.00	0.04	0.01	0.05	0.01	0.01	0.02
Grading/Excavation-Haul	T7 Single Construction	2018	3.14	66.96	13.05	0.13	3.51	1.66	5.17	0.96	1.59	2.55
Grading/Excavation-Vendor	MHDT/HHDT	2018	0.03	0.58	0.18	0.00	0.04	0.01	0.05	0.01	0.01	0.02
Building Construction 1-2018	MHDT/HHDT	2018	0.36	7.03	2.17	0.02	0.47	0.13	0.60	0.13	0.12	0.26
Building Construction 1-2019	MHDT/HHDT	2019	0.32	6.50	2.14	0.02	0.47	0.11	0.58	0.13	0.10	0.24
Building Construction 2	MHDT/HHDT	2019	0.32	6.50	2.14	0.02	0.47	0.11	0.58	0.13	0.10	0.24

Yucca
On-Road Truck Emission Factors (Aggregate Model Year, Aggregate Speeds)

EMFAC2017 (v1.0.2) Emission Rates
Region Type: Air District
Region: SOUTH COAST AQMD
Calendar Year: 2017, 2018, 2019, 2020
Season: Annual

						CRITERIA AIR POLLUTANTS (g/mile for RUNEX, PMBW and PMTW, g/min for IDLEX)															
Region	**CalYr**	**VehClass**	**MdlYr**	**Speed**	**Fuel**	**ROG_RUNEX**	**ROG_IDLEX**	**NOx_RUNEX**	**NOx_IDLEX**	**CO_RUNEX**	**CO_IDLEX**	**SO2_RUNEX**	**SO2_IDLEX**	**PM10_BW**	**PM10_TW**	**PM10_RUNEX**	**PM10_IDLEX**	**PM2.5_BW**	**PM2.5_TW**	**PM2.5_RUNEX**	**PM2.5_IDLEX**
South Coast AQMD	2017	T7 single construction	Aggregated	Aggregated	DSL	0.3831	0.0846	7.8651	1.0658	1.4771	0.5994	0.0150	0.0011	0.0617	0.0360	0.2230	0.0085	0.0265	0.0090	0.2134	0.0081
South Coast AQMD	2018	T7 single construction	Aggregated	Aggregated	DSL	0.3256	0.0803	7.1957	1.0593	1.2469	0.6211	0.0148	0.0012	0.0617	0.0360	0.1856	0.0072	0.0265	0.0090	0.1776	0.0069
South Coast AQMD	2019	T7 single construction	Aggregated	Aggregated	DSL	0.2787	0.0769	6.6512	1.0387	1.0611	0.6441	0.0146	0.0012	0.0617	0.0360	0.1576	0.0062	0.0265	0.0090	0.1508	0.0060
South Coast AQMD	2020	T7 single construction	Aggregated	Aggregated	DSL	0.1877	0.0629	5.4519	0.9306	0.7137	0.7724	0.0144	0.0015	0.0617	0.0360	0.1047	0.0016	0.0265	0.0090	0.1001	0.0015
South Coast AQMD	2017	HHDT/MHDT	Aggregated	Aggregated	DSL	0.2451	0.1058	5.1049	1.5968	0.8532	1.0374	0.0124	0.0023	0.0956	0.0238	0.1323	0.0069	0.0410	0.0059	0.1265	0.0066
South Coast AQMD	2018	HHDT/MHDT	Aggregated	Aggregated	DSL	0.2055	0.1047	4.5952	1.5730	0.7262	1.1120	0.0121	0.0024	0.0956	0.0237	0.1104	0.0057	0.0410	0.0059	0.1056	0.0055
South Coast AQMD	2019	HHDT/MHDT	Aggregated	Aggregated	DSL	0.1727	0.1044	4.1479	1.5497	0.6220	1.1816	0.0119	0.0024	0.0956	0.0237	0.0933	0.0048	0.0410	0.0059	0.0893	0.0046
South Coast AQMD	2020	HHDT/MHDT	Aggregated	Aggregated	DSL	0.1393	0.1030	3.6566	1.5201	0.5143	1.2661	0.0117	0.0025	0.0956	0.0237	0.0758	0.0034	0.0410	0.0059	0.0725	0.0032

Source: California Air Resources Board, EMFAC2017, http://www.arb.ca.gov/emfac/2017/. Accessed June 2019.

Yucca
Road Dust Emission Factors

Paved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,P} = (k\ (sL)^{0.91} \times (W)^{1.02})$

Where:

$EF_{Dust,P}$ =	Paved Road Dust Emission Factor (having the same units as k)
k =	particle size multiplier
sL =	road surface silt loading (g/m^2)
W =	average fleet vehicle weight (tons) (CARB uses 2.4 tons as a fleet average vehicle weight factor)

	Emission Factor (grams per VMT)	
	PM10	PM2.5
k	0.9979	0.2449
sL	0.1	0.1
W	2.4	2.4
$EF_{Dust,P}$	3.00E-01	7.36E-02

Unpaved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,U} = (k\ (\ s / 12)^{1} \times (Sp / 30)^{0.5} / (M / 0.5)^{0.2}) - C)$

Where:

$EF_{Dust,U}$ =	Unpaved Road Dust Emission Factor (having the same units as k)
k =	particle size multiplier
s =	surface material silt content (%)
Sp =	mean vehicle speed (mph)
M =	surface material moisture content (%)
C =	Emission Factor for 1980s vehicle fleet exhaust, brake wear, and tire wear

	Emission Factor (grams per VMT)	
	PM10	PM2.5
k	816.47	81.65
s	4.3%	4.3%
Sp	15	15
M	0.5%	0.5%
C	0.00047	0.00036
$EF_{Dust,U}$	5.20E+00	5.19E-01

Sources:
SCAQMD, CalEEMod, Version 2011.1.
CARB, *Entrained Dust from Paved Road Travel: Emission Estimation Methodology Background Document* , (1997).
USEPA, *AP-42* , Fifth Edition, Volume I, Chapter 13.2.1 - Paved Roads, (2011).
PCR Services Corporation, 2013.

Exhibit B
Project Operational Emissions

ESA

B-1 Summary of Assumptions

6220 West Yucca Street Mixed Use Project
Draft Environmental Impact Report
Greenhouse Gas Assessment

Project Solid Waste Disposal Rates

Land Use	Project Units	Solid Waste Factor [a] (lbs/unit/day)	Solid Waste Before Diversion (tons/year)	Diversion Rate [b] (%)	Solid Waste After Diversion
Residential	210 DU	12.23	468.7	76%	112.5
Hotel [c]	156 DU	4	113.9	76%	27.3
Commercial/Restaurant	12.5 KSF	5	11.4	76%	2.7
Total Project					**142.6**

Notes:

a. Generation factors provided by the CalRecycle website: Estimated Solid Waste Generation Rates. Available https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates. Accessed January 2017.

b. City of Los Angeles, Zero Waste Progress Report, (March 2013) 3. According to the Report, the City achieved a landfill diversion rate of approximately 76% by year 2012.

c. Hotel suites count as 2 rooms. The hotel proposes to include 20 suites; therefore, the total number of rooms for solid waste generation purposes is 116 + 2*20 = 156.

Source: ESA 2017.

Project Solid Waste Greenhouse Gas Emissions

Refer to CalEEMod output files.

6220 West Yucca Street Project
Draft Environmental Impact Report
Greenhouse Gas Assessment

Project Water Demand Rates

Land Use	Units (DU, Rooms, or 1000 sqft)	Wastewater Generation [a] (gal/unit/day)	Water Demand [b] (120% factor) (gal/day)	Indoor Water Demand Rate (gal/year)	Outdoor Water Demand Rate (gal/year)	Indoor Water Reduction (%)	Reduced Indoor Water Demand Rate (gal/year)	Outdoor Water Reduction (%)	Reduced Outdoor Water Demand Rate (gal/year)
Multi-Family Residential	210		33,336	10,139,700	2,027,940	20%	8,111,760	20%	1,622,352
Studio	-	*75*	-						
One Bedroom	*104*	*110*	*13,728*						
Two Bedroom	*95*	*150*	*17,100*						
Three Bedroom	*11*	*190*	*2,508*						
Hotel [c]	156	120	22,464	6,832,800	1,366,560	20%	5,466,240	20%	1,093,248
Restaurant (seats)	509	30	18,324	5,573,550	1,114,710	20%	4,458,840	20%	891,768
Retail	3.45	25	104	31,481	6,296	20%	25,185	20%	5,037
Open Space (Bar/Public Table Area)	0.92	720	795	241,776	48,355	20%	193,421	20%	38,684
Spa (Fitness)	3.85	650	3,003	913,413	182,683	20%	730,730	20%	146,146
Parking Structure	189.71	20	4,553	-	1,661,816	-	-	20%	1,329,453
Total Water Demand				**23,732,720**	**6,408,360**		**18,986,176**		**5,126,688**

Notes:

a. Wastewater generation factors obtained from City of Los Angeles Bureau of Engineering, Sewer Capacity Availability Request (SCAR), dated January 10, 2017 and based on Los Angeles Department of Public Works, Bureau of Sanitation, Sewerage Facilities Charge Sewage Generation Factor for Residential and Commercial Categories, dated April 6, 2012. These factors do not account for water saving features incorporated into the Project.

b. Water demand rates are calculated based on the wastewater generation rates and increasing the factor by 20% to account for absorption, evaporation, consumption, irrigation, and other losses.

c. Hotel suites count as 2 rooms. The hotel proposes to include 20 suites; therefore, the total number of rooms for water demand purposes is 116 + 2*20 = 156.

Source: Southland Civil Engineering & Survey, LLP 2017; ESA 2017.

Project Water and Wastewater Greenhouse Gas Emissions

Refer to CalEEMod output files.

6220 Yucca
Air Quality Assessment

Localized Significance Thresholds
(SCAQMD, Final Localized Significance Threshold Methodology, Appendix C (2008))

Source Receptor Area 1
Adjacent to Offsite Receptors (i.e., within 25 meters)

	Screening Values		Project Site [a]
Acres	1	2	1.16
Construction LSTs			
NOX	74	108	**79**
CO	680	1,048	**739**
PM10	5	8	**5.5**
PM2.5	3	5	**3.3**
Operational LSTs			
NOX	74	108	**79**
CO	680	1,048	**739**
PM10 [b]	2	2	**2.1**
PM2.5	1	2	**1.2**

Notes:

a. Project screening levels are linearly interpolated based on the 1- and 2- acre acreening levels.

b. The SCAQMD LSTs are based on Source Receptor Area 1 (Central Los Angeles County) for a 1.16-acre site with sensitive receptors conservatively assumed to be located adjacent to the construction area.

PROPOSED PROJECT: 6220 West Yucca Street Mixed Use Project
Draft Environmental Impact Report
Quantifying Greenhouse Gas Mitigation Measures - Transportation (Based on CAPCOA Guidance (August 2010))

PROPOSED PROJECT

Location Type	Global % VMT Reduction Cap
Urban:	75%
Less than 5 miles from central business district	
Jobs-rich (jobs/housing ratio greater than 1.5)	
Typical buildings are 6 stories or higher	
Grid street pattern	
Minimal setbacks	
Parking constrained on- and off-street	
Parking prices high/highest in the region	
High-quality rail; bus service at 10 min or less in peak hours	

Location Type	Global % VMT Reduction Cap
Suburban Center:	20%
Typically 20 miles or more from central business district	
Balanced jobs-housing	
Typical buildings are 2 stories	
Grid street pattern	
Setbacks 0 - 20 feet	
Parking somewhat constrained on-street; ample off-street	
Parking prices low (if priced at all)	
Bus service at 20 - 30 min and/or commuter rail station	

Compact Infill:	40%
Typically 5 - 15 miles from central business district	
Balanced jobs-housing (jobs/housing ratio from 0.9 to 1.2)	
Typical buildings are 2 - 4 stories	
Grid street pattern	
Setbacks 0 - 20 feet	
Parking constrained	
Parking prices low/moderate	
Rail w/in 2 miles; bus service at 15 min or less in peak hours	

Suburban:	15%
Typically 20 miles or more from central business district	
Housing-rich	
Typical buildings are 1 - 2 stories	
Curvilinear street pattern (cul-de-sac based)	
Parking between street and buildings; large lot residential	
Parking ample; largely surface lot-based	
No parking prices	
Limited bus service at 30 minute headways or more	

Total Global Transportation VMT Reduction = 28.75% Cap: 40%
(Includes double counting correction.)

Total LUT/SDT/PDT/TST VMT Reduction = 28.75% Cap: 35%

Land Use/Location Transportation Measures (65% Reduction Cap)

Total LUT % VMT Reduction = 27.29% Cap: 30%

LUT-1 Increase Density

% VMT Reduction = A × B [not to exceed 30%]

A (housing) = (Number of DU/acre - 7.6) / 7.6
A (jobs) = (Number of Jobs/acre - 20) / 20
B = 0.07%

% VMT Reduction = 0.63% Cap: 30%

Number of DU/acre: 181.0 A = 500%
Number of Jobs/acre: 99.0 A = 395%

LUT-2 Increase Location Efficiency

% VMT Reduction Cap for all LUT measures

Urban LUT % VMT Reduction Cap: 65%
Compact Infill LUT % VMT Reduction Cap: 30%
Suburban Center LUT % VMT Reduction Cap: 10%

LUT-3 Increase Diversity of Urban and Suburban Developments (Mixed Use)

Urban: The urban project will be predominantly characterized by properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or on a single site in an integrated development project with functional interrelationships and a coherent physical design.

Suburban: The suburban project will have at least three uses of the following on site and/or offsite within ¼-mile: Residential Development, Retail Development, Park, Open Space, or Office.

(ACOUNTED FOR IN TRAFFIC STUDY)

% VMT Reduction = Land Use × B [not to exceed 30%]
Land Use = % increase in land use index vs. single use
= (Land Use Index - 0.15) / 0.15
Land Use Index = -a / ln(6)
$a = \sum a_i \times \ln(a_i)$
a_i = building floor area / total square feet of area considered
a_1 = single family
a_2 = multi-family
a_3 = commercial B = 0.09
a_4 = industrial
a_5 = institutional
a_6 = park

% VMT Reduction = 0.00% Cap: 30%

Single family sqft:	-	a_1 = -
Multi-family sqft:	-	a_2 = -
Commercial sqft:	-	a_3 = -
Industrial sqft:	-	a_4 = -
Institutional sqft:	-	a_5 = -
Park sqft:	-	a_6 = -
Total sqft:	-	

(Note: If $a_i = 0$, then set $a_i = 0.0000001$)

LUT-4 Increase Destination Accessibility

% VMT Reduction = Center Distance × B [not to exceed 20%]
Center Distance = (12 - Miles to downtown or job center) / 12
B = 0.20

% VMT Reduction = 9.67% Cap: 20%

Miles to downtown or job center: 6.2
(Average distance to: Hollywood, Beverly Hills, Century City, Downtown L.A., Westwood. These locations are identified as job centers by Metro and by SCAG.)
(Note: Only effective for 8 miles or less)

LUT-5	Increase Transit Accessibility **(ACOUNTED FOR IN TRAFFIC STUDY)**	% VMT Reduction = Transit × B [not to exceed 30%] Transit = % project transit - % typical ITE transit % project transit = -50x + 38 [where x = 0 - 0.5 miles to transit] -4.4x + 15.2 [where x = 0.5 - 3 miles to transit] % typical ITE transit = 1.3% B = 0.67	% VMT Reduction = 16.21% Cap: 30% Miles to transit: 0.25 (Note: Only effective for 3 miles or less)
LUT-6	Integrated Affordable and Below Market Rate Housing	% VMT Reduction = 4% × % units BMR	% VMT Reduction = 0.00% % of units below market rate: 0.0% (Note: Only effective up to 30%)
LUT-7	Orient Project Toward Non-Auto Corridor	Not quantified separately; Assumed to be included in LUT-3 (If included in LUT-3, VMT reduction should be at least 0.5% per 1% inprovement in transit frequency and 0.5% per 10% increase in transit ridership)	
LUT-8	Locate Project near Bike Path/Bike Lanes	Not quantified separately; Assumed to be included in LUT-4 (If included in LUT-4, VMT reduction should be at least 0.625%)	
LUT-9	Improve Design of Development	% VMT Reduction = Intersections × B Intersections = % increase vs. typical ITE suburban = (Intersections per square mile of project - 36) / 36 B = 0.12	% VMT Reduction = 3.33% Intersections per square mile: 46 (Estimated based on count of intersections within 1 mile radius of project site.) (Note: Only effective up to 100)
Neighborhood/Site Enhancement Measures (5% Reduction Cap without NEV; 15% Reduction Cap with NEV)			**Total SDT % VMT Reduction = 2.00%** Cap: 5% without NEV Cap: 15% With NEV
SDT-1	Provide Pedestrian Network Improvements	VMT reduction based on urban/rural context and pedestrian accomodations	% VMT Reduction = 2.00% Pedestrian network on-site and connecting off-site (urban/suburban): X 2% Pedestrian network on-site (urban/suburban): 1% (Mark an "X" in one of the above)

B-2 Operational Emissions Summary

6220 West Yucca Street Mixed Use Project
Draft Environmental Impact Report
Air Quality Assessment

Project Regional Operational Emissions Summary

Source	Emissions in Pounds per Day					
	VOC	**NOx**	**CO**	**SO2**	**PM10**	**PM2.5**
Project On-Site						
Area (Coating, Consumer Products, Landscaping)	9	4	19	0.02	0.4	0.4
Energy (Natural Gas)	0.2	2	1	0.01	0.1	0.1
Stationary (Charbroiler)	0.1	-	-	-	0.6	0.4
Stationary (Emergency Generator)	0.16	3.12	2.84	6.02E-05	0.02	0.02
Subtotal	9	8	23	0.03	1.1	0.9
Project Off-Site						
Motor Vehicles	4	9	38	0.1	9.9	2.7
Regional Net Total	**13.48**	**17.17**	**60.92**	**0.13**	**11.0**	**3.6**
SCAQMD Regional Significance Threshold	**55**	**55**	**550**	**150**	**150.0**	**55.0**
Over/(Under)	(41.52)	(37.83)	(489.08)	(149.87)	(139.01)	(51.39)
Exceeds Threshold?	No	No	No	No	No	No

Source: ESA, 2019

6220 West Yucca Street Mixed Use Project
Draft Environmental Impact Report
Air Quality Assessment

Project Localized Operational Emissions Summary

Source	Emissions in Pounds per Day					
	VOC	**NOx**	**CO**	**SO2**	**PM10**	**PM2.5**
Project On-Site						
Area (Coating, Consumer Products, Landscaping)	9	4	19	0.02	0.4	0.4
Energy (Natural Gas)	0.2	2	1	0.01	0.1	0.1
Stationary (Charbroiler)	0.1	-	-	-	0.6	0.4
Stationary (Emergency Generator)	0.16	3.12	2.84	6.02E-05	0.02	0.02
Subtotal	9	8	23	0.03	1.1	0.9
Localized Total	**9**	**8**	**23**	**0.03**	**1.1**	**0.9**
SCAQMD Localized Significance Threshold	**-**	**79**	**739**	**-**	**2.0**	**1.2**
Over/(Under)	-	(70.66)	(716.15)	-	(0.9)	(0.3)
Exceeds Threshold?	-	No	No	-	No	No

Source: ESA, 2019

6220 West Yucca Street Mixed Use Project
Draft Environmental Impact Report
Air Quality Assessment

Project Regional Operational Emissions Summary - With SAFE Adjustment Factors

Source	Emissions in Pounds per Day					
	VOC	**NOx**	**CO**	**SO2**	**PM10**	**PM2.5**
Project On-Site						
Area (Coating, Consumer Products, Landscaping)	9	4	19	0.02	0.4	0.4
Energy (Natural Gas)	0.2	2	1	0.01	0.1	0.1
Stationary (Charbroiler)	0.1	-	-	-	0.6	0.4
Stationary (Emergency Generator)	0.16	3.12	2.84	6.02E-05	0.02	0.02
Subtotal	9	8	23	0.03	1.1	0.9
Project Off-Site						
Motor Vehicles	4	9	38	0.1	9.9	2.7
Regional Net Total	**13.48**	**17.17**	**60.94**	**0.13**	**11.0**	**3.6**
SCAQMD Regional Significance Threshold	**55**	**55**	**550**	**150**	**150.0**	**55.0**
Over/(Under)	(41.52)	(37.83)	(489.06)	(149.87)	(139.01)	(51.39)
Exceeds Threshold?	No	No	No	No	No	No

Source: ESA, 2019

6220 West Yucca Street Mixed Use Project
Draft Environmental Impact Report
Air Quality Assessment

Project Localized Operational Emissions Summary

Source	Emissions in Pounds per Day					
	VOC	**NOx**	**CO**	**SO2**	**PM10**	**PM2.5**
Project On-Site						
Area (Coating, Consumer Products, Landscaping)	9	4	19	0.02	0.4	0.4
Energy (Natural Gas)	0.2	2	1	0.01	0.1	0.1
Stationary (Charbroiler)	0.1	-	-	-	0.6	0.4
Stationary (Emergency Generator)	0.16	3.12	2.84	6.02E-05	0.02	0.02
Subtotal	9	8	23	0.03	1.1	0.9
Localized Total	**9**	**8**	**23**	**0.03**	**1.1**	**0.9**
SCAQMD Localized Significance Threshold	**-**	**79**	**739**	**-**	**2.0**	**1.2**
Over/(Under)	-	(70.66)	(716.15)	-	(0.9)	(0.3)
Exceeds Threshold?	-	No	No	-	No	No

Source: ESA, 2019

B-3 CalEEMod Output Files

6220 W Yucca Street Project - Operations (Initial Year) - Area, Energy, Water, Waste

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	206.00	Space	0.10	89,222.00	0
Unenclosed Parking with Elevator	232.00	Space	0.10	100,483.00	0
City Park	0.60	Acre	0.10	18,535.00	0
Health Club	2.53	1000sqft	0.05	2,530.00	0
Hotel	136.00	Room	0.21	80,335.00	0
Quality Restaurant	9.05	1000sqft	0.10	9,050.00	0
Recreational Swimming Pool	4.84	1000sqft	0.10	4,840.00	0
Apartments High Rise	210.00	Dwelling Unit	0.35	242,285.00	426
Strip Mall	3.45	1000sqft	0.05	3,450.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2021
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	595	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor: California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects (Jan 2017).

Land Use - Multi-Fam (210 DU); Hotel (136 rooms); Retail (3.45 ksf); Rest. (9.05 ksf); Pool (4.84 ksf); Fitness (2.53 ksf); Open Space (25.905 ksf); Parking (~232 above, ~206 below). Pop.=2.03/DU (Hollywood CPA, 426 people).

Woodstoves - Assumes residential units equipped with natural gas hearths (210 DU) (SCAQMD Rule 445).

Energy Use - Adjusted for Title 24 (2016) compliance. According to CEC data, Title 24 (2016) standards are expected to result in energy savings of 5% non-residential and 28% residential over the 2013 standards.

Water And Wastewater - Refer to "Project Water Demand Rates" worksheet provided in this Appendix.

Solid Waste - Refer to "Project Solid Waste Disposal Rates" worksheet provided in this Appendix.

Area Mitigation -

Energy Mitigation - Exceed Title 24 by 5% per PDF. Energy efficient appliances (e.g., ENERGY STAR qualified).

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	741.44	533.84
tblEnergyUse	LightingElect	0.00	2.50
tblEnergyUse	LightingElect	2.63	2.50
tblEnergyUse	LightingElect	3.20	3.04
tblEnergyUse	LightingElect	2.20	2.09
tblEnergyUse	LightingElect	8.13	7.72
tblEnergyUse	LightingElect	0.00	3.04
tblEnergyUse	LightingElect	6.43	6.11
tblEnergyUse	LightingElect	2.63	2.50
tblEnergyUse	T24E	194.04	139.71
tblEnergyUse	T24E	3.92	3.72
tblEnergyUse	T24E	2.36	2.24
tblEnergyUse	T24E	2.68	2.55
tblEnergyUse	T24E	8.50	8.08
tblEnergyUse	T24E	4.20	3.99
tblEnergyUse	T24NG	6,328.91	4,556.82
tblEnergyUse	T24NG	13.71	13.02
tblEnergyUse	T24NG	20.02	19.02
tblEnergyUse	T24NG	43.19	41.03
tblEnergyUse	T24NG	0.00	13.02
tblEnergyUse	T24NG	1.16	1.10

tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	178.50	210.00
tblFireplaces	NumberNoFireplace	21.00	0.00
tblFireplaces	NumberWood	10.50	0.00
tblLandUse	BuildingSpaceSquareFeet	82,400.00	89,222.00
tblLandUse	BuildingSpaceSquareFeet	92,800.00	100,483.00
tblLandUse	BuildingSpaceSquareFeet	0.00	18,535.00
tblLandUse	BuildingSpaceSquareFeet	197,472.00	80,335.00
tblLandUse	BuildingSpaceSquareFeet	0.00	4,840.00
tblLandUse	BuildingSpaceSquareFeet	210,000.00	242,285.00
tblLandUse	GreenSpaceSquareFeet	26,136.00	18,535.00
tblLandUse	LandUseSquareFeet	82,400.00	89,222.00
tblLandUse	LandUseSquareFeet	92,800.00	100,483.00
tblLandUse	LandUseSquareFeet	26,136.00	18,535.00
tblLandUse	LandUseSquareFeet	197,472.00	80,335.00
tblLandUse	LandUseSquareFeet	210,000.00	242,285.00
tblLandUse	LotAcreage	1.85	0.10
tblLandUse	LotAcreage	2.09	0.10
tblLandUse	LotAcreage	0.60	0.10
tblLandUse	LotAcreage	0.06	0.05
tblLandUse	LotAcreage	4.53	0.21
tblLandUse	LotAcreage	0.21	0.10
tblLandUse	LotAcreage	0.11	0.10
tblLandUse	LotAcreage	3.39	0.35
tblLandUse	LotAcreage	0.08	0.05
tblLandUse	Population	601.00	426.00
tblLandUse	RecSwimmingAreaSquareFeet	4,840.00	4,840.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595
tblProjectCharacteristics	OperationalYear	2018	2021
tblSolidWaste	SolidWasteGenerationRate	96.60	112.50

tblSolidWaste	SolidWasteGenerationRate	0.05	0.00
tblSolidWaste	SolidWasteGenerationRate	14.42	0.00
tblSolidWaste	SolidWasteGenerationRate	74.46	27.30
tblSolidWaste	SolidWasteGenerationRate	8.26	0.00
tblSolidWaste	SolidWasteGenerationRate	27.59	0.00
tblSolidWaste	SolidWasteGenerationRate	3.62	2.70
tblTripsAndVMT	HaulingTripNumber	227.00	1,000.00
tblTripsAndVMT	HaulingTripNumber	0.00	17,200.00
tblWater	IndoorWaterUseRate	13,682,345.38	8,111,760.00
tblWater	IndoorWaterUseRate	149,632.15	193,421.00
tblWater	IndoorWaterUseRate	3,449,880.72	5,466,240.00
tblWater	IndoorWaterUseRate	2,746,980.10	4,458,840.00
tblWater	IndoorWaterUseRate	286,252.82	730,730.00
tblWater	IndoorWaterUseRate	255,550.20	25,185.00
tblWater	OutdoorWaterUseRate	8,625,826.44	1,622,352.00
tblWater	OutdoorWaterUseRate	714,888.81	0.00
tblWater	OutdoorWaterUseRate	0.00	625,268.00
tblWater	OutdoorWaterUseRate	91,710.03	38,684.00
tblWater	OutdoorWaterUseRate	383,320.08	1,093,248.00
tblWater	OutdoorWaterUseRate	175,339.16	891,768.00
tblWater	OutdoorWaterUseRate	175,445.28	146,146.00
tblWater	OutdoorWaterUseRate	156,627.54	5,037.00
tblWater	OutdoorWaterUseRate	0.00	704,185.00
tblWoodstoves	NumberCatalytic	10.50	0.00
tblWoodstoves	NumberNoncatalytic	10.50	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.8269	3.6845	18.9062	0.0232		0.3776	0.3776		0.3776	0.3776	0.0000	4,478.3849	4,478.3849	0.1158	0.0815	4,505.5760
Energy	0.1775	1.5823	1.1228	9.6800e-003		0.1227	0.1227		0.1227	0.1227		1,936.8270	1,936.8270	0.0371	0.0355	1,948.3366

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.8269	3.6845	18.9062	0.0232		0.3776	0.3776		0.3776	0.3776	0.0000	4,478.3849	4,478.3849	0.1158	0.0815	4,505.5760
Energy	0.1732	1.5433	1.0951	9.4500e-003		0.1197	0.1197		0.1197	0.1197		1,889.1884	1,889.1884	0.0362	0.0346	1,900.4149

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1732	1.5433	1.0951	9.4500e-003		0.1197	0.1197		0.1197	0.1197		1,889.1884	1,889.1884	0.0362	0.0346	1,900.4149
NaturalGas Unmitigated	0.1775	1.5823	1.1228	9.6800e-003		0.1227	0.1227		0.1227	0.1227		1,936.8270	1,936.8270	0.0371	0.0355	1,948.3366

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 High Rise	5401.21	0.0583	0.4978	0.2118	3.1800e-003		0.0402	0.0402		0.0402	0.0402		635.4367	635.4367	0.0122	0.0117	639.2127
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	121.093	1.3100e-003	0.0119	9.9700e-003	7.0000e-005		9.0000e-004	9.0000e-004		9.0000e-004	9.0000e-004		14.2463	14.2463	2.7000e-004	2.6000e-004	14.3309
Hotel	5079.81	0.0548	0.4980	0.4183	2.9900e-003		0.0379	0.0379		0.0379	0.0379		597.6251	597.6251	0.0115	0.0110	601.1765
Quality Restaurant	5673.23	0.0612	0.5562	0.4672	3.3400e-003		0.0423	0.0423		0.0423	0.0423		667.4393	667.4393	0.0128	0.0122	671.4056
Recreational Swimming Pool	172.649	1.8600e-003	0.0169	0.0142	1.0000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003		20.3116	20.3116	3.9000e-004	3.7000e-004	20.4323
Strip Mall	15.0288	1.6000e-004	1.4700e-003	1.2400e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004		1.7681	1.7681	3.0000e-005	3.0000e-005	1.7786
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1775**	**1.5823**	**1.1228**	**9.6900e-003**		**0.1227**	**0.1227**		**0.1227**	**0.1227**		**1,936.8271**	**1,936.8271**	**0.0371**	**0.0355**	**1,948.3366**

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 High Rise	5.27012	0.0568	0.4857	0.2067	3.1000e-003		0.0393	0.0393		0.0393	0.0393		620.0147	620.0147	0.0119	0.0114	623.6991
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	0.116581	1.2600e-003	0.0114	9.6000e-003	7.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004		13.7154	13.7154	2.6000e-004	2.5000e-004	13.7969
Hotel	4.8705	0.0525	0.4775	0.4011	2.8700e-003		0.0363	0.0363		0.0363	0.0363		573.0002	573.0002	0.0110	0.0105	576.4053
Quality Restaurant	5.62237	0.0606	0.5512	0.4630	3.3100e-003		0.0419	0.0419		0.0419	0.0419		661.4551	661.4551	0.0127	0.0121	665.3858
Recreational Swimming Pool	0.164016	1.7700e-003	0.0161	0.0135	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003		19.2960	19.2960	3.7000e-004	3.5000e-004	19.4107
Strip Mall	0.0145089	1.6000e-004	1.4200e-003	1.1900e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004		1.7069	1.7069	3.0000e-005	3.0000e-005	1.7171
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1732**	**1.5433**	**1.0951**	**9.4600e-003**		**0.1197**	**0.1197**		**0.1197**	**0.1197**		**1,889.1884**	**1,889.1884**	**0.0362**	**0.0346**	**1,900.4149**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.8269	3.6845	18.9062	0.0232		0.3776	0.3776		0.3776	0.3776	0.0000	4,478.3849	4,478.3849	0.1158	0.0815	4,505.5760
Unmitigated	8.8269	3.6845	18.9062	0.0232		0.3776	0.3776		0.3776	0.3776	0.0000	4,478.3849	4,478.3849	0.1158	0.0815	4,505.5760

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	0.6720					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.2155					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4077	3.4835	1.4824	0.0222		0.2817	0.2817		0.2817	0.2817	0.0000	4,447.0588	4,447.0588	0.0852	0.0815	4,473.4855
Landscaping	0.5318	0.2010	17.4238	9.2000e-004		0.0959	0.0959		0.0959	0.0959		31.3261	31.3261	0.0306		32.0905
Total	**8.8269**	**3.6845**	**18.9062**	**0.0232**		**0.3776**	**0.3776**		**0.3776**	**0.3776**	**0.0000**	**4,478.3849**	**4,478.3849**	**0.1158**	**0.0815**	**4,505.5760**

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	0.6720					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.2155					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4077	3.4835	1.4824	0.0222		0.2817	0.2817		0.2817	0.2817	0.0000	4,447.0588	4,447.0588	0.0852	0.0815	4,473.4855
Landscaping	0.5318	0.2010	17.4238	9.2000e-004		0.0959	0.0959		0.0959	0.0959		31.3261	31.3261	0.0306		32.0905
Total	**8.8269**	**3.6845**	**18.9062**	**0.0232**		**0.3776**	**0.3776**		**0.3776**	**0.3776**	**0.0000**	**4,478.3849**	**4,478.3849**	**0.1158**	**0.0815**	**4,505.5760**

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

6220 W Yucca Street Project - Operations (Initial Year) - Area, Energy, Water, Waste

South Coast Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	206.00	Space	0.10	89,222.00	0
Unenclosed Parking with Elevator	232.00	Space	0.10	100,483.00	0
City Park	0.60	Acre	0.10	18,535.00	0
Health Club	2.53	1000sqft	0.05	2,530.00	0
Hotel	136.00	Room	0.21	80,335.00	0
Quality Restaurant	9.05	1000sqft	0.10	9,050.00	0
Recreational Swimming Pool	4.84	1000sqft	0.10	4,840.00	0
Apartments High Rise	210.00	Dwelling Unit	0.35	242,285.00	426
Strip Mall	3.45	1000sqft	0.05	3,450.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2021
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	595	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor: California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects (Jan 2017).

Land Use - Multi-Fam (210 DU); Hotel (136 rooms); Retail (3.45 ksf); Rest. (9.05 ksf); Pool (4.84 ksf); Fitness (2.53 ksf); Open Space (25.905 ksf); Parking (~232 above, ~206 below). Pop.=2.03/DU (Hollywood CPA, 426 people).

Woodstoves - Assumes residential units equipped with natural gas hearths (210 DU) (SCAQMD Rule 445).

Energy Use - Adjusted for Title 24 (2016) compliance. According to CEC data, Title 24 (2016) standards are expected to result in energy savings of 5% non-residential and 28% residential over the 2013 standards.

Water And Wastewater - Refer to "Project Water Demand Rates" worksheet provided in this Appendix.

Solid Waste - Refer to "Project Solid Waste Disposal Rates" worksheet provided in this Appendix.

Area Mitigation -

Energy Mitigation - Exceed Title 24 by 5% per PDF. Energy efficient appliances (e.g., ENERGY STAR qualified).

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	741.44	533.84
tblEnergyUse	LightingElect	0.00	2.50
tblEnergyUse	LightingElect	2.63	2.50
tblEnergyUse	LightingElect	3.20	3.04
tblEnergyUse	LightingElect	2.20	2.09
tblEnergyUse	LightingElect	8.13	7.72
tblEnergyUse	LightingElect	0.00	3.04
tblEnergyUse	LightingElect	6.43	6.11
tblEnergyUse	LightingElect	2.63	2.50
tblEnergyUse	T24E	194.04	139.71
tblEnergyUse	T24E	3.92	3.72
tblEnergyUse	T24E	2.36	2.24
tblEnergyUse	T24E	2.68	2.55
tblEnergyUse	T24E	8.50	8.08
tblEnergyUse	T24E	4.20	3.99
tblEnergyUse	T24NG	6,328.91	4,556.82
tblEnergyUse	T24NG	13.71	13.02
tblEnergyUse	T24NG	20.02	19.02
tblEnergyUse	T24NG	43.19	41.03
tblEnergyUse	T24NG	0.00	13.02
tblEnergyUse	T24NG	1.16	1.10

tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	178.50	210.00
tblFireplaces	NumberNoFireplace	21.00	0.00
tblFireplaces	NumberWood	10.50	0.00
tblLandUse	BuildingSpaceSquareFeet	82,400.00	89,222.00
tblLandUse	BuildingSpaceSquareFeet	92,800.00	100,483.00
tblLandUse	BuildingSpaceSquareFeet	0.00	18,535.00
tblLandUse	BuildingSpaceSquareFeet	197,472.00	80,335.00
tblLandUse	BuildingSpaceSquareFeet	0.00	4,840.00
tblLandUse	BuildingSpaceSquareFeet	210,000.00	242,285.00
tblLandUse	GreenSpaceSquareFeet	26,136.00	18,535.00
tblLandUse	LandUseSquareFeet	82,400.00	89,222.00
tblLandUse	LandUseSquareFeet	92,800.00	100,483.00
tblLandUse	LandUseSquareFeet	26,136.00	18,535.00
tblLandUse	LandUseSquareFeet	197,472.00	80,335.00
tblLandUse	LandUseSquareFeet	210,000.00	242,285.00
tblLandUse	LotAcreage	1.85	0.10
tblLandUse	LotAcreage	2.09	0.10
tblLandUse	LotAcreage	0.60	0.10
tblLandUse	LotAcreage	0.06	0.05
tblLandUse	LotAcreage	4.53	0.21
tblLandUse	LotAcreage	0.21	0.10
tblLandUse	LotAcreage	0.11	0.10
tblLandUse	LotAcreage	3.39	0.35
tblLandUse	LotAcreage	0.08	0.05
tblLandUse	Population	601.00	426.00
tblLandUse	RecSwimmingAreaSquareFeet	4,840.00	4,840.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595
tblProjectCharacteristics	OperationalYear	2018	2021
tblSolidWaste	SolidWasteGenerationRate	96.60	112.50

tblSolidWaste	SolidWasteGenerationRate	0.05	0.00
tblSolidWaste	SolidWasteGenerationRate	14.42	0.00
tblSolidWaste	SolidWasteGenerationRate	74.46	27.30
tblSolidWaste	SolidWasteGenerationRate	8.26	0.00
tblSolidWaste	SolidWasteGenerationRate	27.59	0.00
tblSolidWaste	SolidWasteGenerationRate	3.62	2.70
tblWater	IndoorWaterUseRate	13,682,345.38	8,111,760.00
tblWater	IndoorWaterUseRate	149,632.15	193,421.00
tblWater	IndoorWaterUseRate	3,449,880.72	5,466,240.00
tblWater	IndoorWaterUseRate	2,746,980.10	4,458,840.00
tblWater	IndoorWaterUseRate	286,252.82	730,730.00
tblWater	IndoorWaterUseRate	255,550.20	25,185.00
tblWater	OutdoorWaterUseRate	8,625,826.44	1,622,352.00
tblWater	OutdoorWaterUseRate	714,888.81	0.00
tblWater	OutdoorWaterUseRate	0.00	625,268.00
tblWater	OutdoorWaterUseRate	91,710.03	38,684.00
tblWater	OutdoorWaterUseRate	383,320.08	1,093,248.00
tblWater	OutdoorWaterUseRate	175,339.16	891,768.00
tblWater	OutdoorWaterUseRate	175,445.28	146,146.00
tblWater	OutdoorWaterUseRate	156,627.54	5,037.00
tblWater	OutdoorWaterUseRate	0.00	704,185.00
tblWoodstoves	NumberCatalytic	10.50	0.00
tblWoodstoves	NumberNoncatalytic	10.50	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.8269	3.6845	18.9062	0.0232		0.3776	0.3776		0.3776	0.3776	0.0000	4,478.3849	4,478.3849	0.1158	0.0815	4,505.5760
Energy	0.1775	1.5823	1.1228	9.6800e-003		0.1227	0.1227		0.1227	0.1227		1,936.8270	1,936.8270	0.0371	0.0355	1,948.3366

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.8269	3.6845	18.9062	0.0232		0.3776	0.3776		0.3776	0.3776	0.0000	4,478.3849	4,478.3849	0.1158	0.0815	4,505.5760
Energy	0.1732	1.5433	1.0951	9.4500e-003		0.1197	0.1197		0.1197	0.1197		1,889.1884	1,889.1884	0.0362	0.0346	1,900.4149

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1732	1.5433	1.0951	9.4500e-003		0.1197	0.1197		0.1197	0.1197		1,889.1884	1,889.1884	0.0362	0.0346	1,900.4149
NaturalGas Unmitigated	0.1775	1.5823	1.1228	9.6800e-003		0.1227	0.1227		0.1227	0.1227		1,936.8270	1,936.8270	0.0371	0.0355	1,948.3366

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 High Rise	5401.21	0.0583	0.4978	0.2118	3.1800e-003		0.0402	0.0402		0.0402	0.0402		635.4367	635.4367	0.0122	0.0117	639.2127
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	121.093	1.3100e-003	0.0119	9.9700e-003	7.0000e-005		9.0000e-004	9.0000e-004		9.0000e-004	9.0000e-004		14.2463	14.2463	2.7000e-004	2.6000e-004	14.3309
Hotel	5079.81	0.0548	0.4980	0.4183	2.9900e-003		0.0379	0.0379		0.0379	0.0379		597.6251	597.6251	0.0115	0.0110	601.1765
Quality Restaurant	5673.23	0.0612	0.5562	0.4672	3.3400e-003		0.0423	0.0423		0.0423	0.0423		667.4393	667.4393	0.0128	0.0122	671.4056
Recreational Swimming Pool	172.649	1.8600e-003	0.0169	0.0142	1.0000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003		20.3116	20.3116	3.9000e-004	3.7000e-004	20.4323
Strip Mall	15.0288	1.6000e-004	1.4700e-003	1.2400e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004		1.7681	1.7681	3.0000e-005	3.0000e-005	1.7786
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1775**	**1.5823**	**1.1228**	**9.6900e-003**		**0.1227**	**0.1227**		**0.1227**	**0.1227**		**1,936.8271**	**1,936.8271**	**0.0371**	**0.0355**	**1,948.3366**

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 High Rise	5.27012	0.0568	0.4857	0.2067	3.1000e-003		0.0393	0.0393		0.0393	0.0393		620.0147	620.0147	0.0119	0.0114	623.6991
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	0.116581	1.2600e-003	0.0114	9.6000e-003	7.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004		13.7154	13.7154	2.6000e-004	2.5000e-004	13.7969
Hotel	4.8705	0.0525	0.4775	0.4011	2.8700e-003		0.0363	0.0363		0.0363	0.0363		573.0002	573.0002	0.0110	0.0105	576.4053
Quality Restaurant	5.62237	0.0606	0.5512	0.4630	3.3100e-003		0.0419	0.0419		0.0419	0.0419		661.4551	661.4551	0.0127	0.0121	665.3858
Recreational Swimming Pool	0.164016	1.7700e-003	0.0161	0.0135	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003		19.2960	19.2960	3.7000e-004	3.5000e-004	19.4107
Strip Mall	0.0145089	1.6000e-004	1.4200e-003	1.1900e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004		1.7069	1.7069	3.0000e-005	3.0000e-005	1.7171
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1732**	**1.5433**	**1.0951**	**9.4600e-003**		**0.1197**	**0.1197**		**0.1197**	**0.1197**		**1,889.1884**	**1,889.1884**	**0.0362**	**0.0346**	**1,900.4149**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.8269	3.6845	18.9062	0.0232		0.3776	0.3776		0.3776	0.3776	0.0000	4,478.3849	4,478.3849	0.1158	0.0815	4,505.5760
Unmitigated	8.8269	3.6845	18.9062	0.0232		0.3776	0.3776		0.3776	0.3776	0.0000	4,478.3849	4,478.3849	0.1158	0.0815	4,505.5760

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	0.6720					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.2155					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4077	3.4835	1.4824	0.0222		0.2817	0.2817		0.2817	0.2817	0.0000	4,447.0588	4,447.0588	0.0852	0.0815	4,473.4855
Landscaping	0.5318	0.2010	17.4238	9.2000e-004		0.0959	0.0959		0.0959	0.0959		31.3261	31.3261	0.0306		32.0905
Total	**8.8269**	**3.6845**	**18.9062**	**0.0232**		**0.3776**	**0.3776**		**0.3776**	**0.3776**	**0.0000**	**4,478.3849**	**4,478.3849**	**0.1158**	**0.0815**	**4,505.5760**

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	0.6720					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.2155					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4077	3.4835	1.4824	0.0222		0.2817	0.2817		0.2817	0.2817	0.0000	4,447.0588	4,447.0588	0.0852	0.0815	4,473.4855
Landscaping	0.5318	0.2010	17.4238	9.2000e-004		0.0959	0.0959		0.0959	0.0959		31.3261	31.3261	0.0306		32.0905
Total	**8.8269**	**3.6845**	**18.9062**	**0.0232**		**0.3776**	**0.3776**		**0.3776**	**0.3776**	**0.0000**	**4,478.3849**	**4,478.3849**	**0.1158**	**0.0815**	**4,505.5760**

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

B-4 EMFAC2017 Operational Mobile Emissions

6220 West Yucca Street Mixed Use Project
Draft Environmental Impact Report
Air Quality and Greenhouse Gas Assessment

			Criteria Pollutant Emissions (pounds/day)									
	Year	VMT/day	ROG	NOx	CO	SOx	PM10 RD	PM10 Exh	PM10 Total	PM2_5 RD	PM2_5 Exh	PM2_5 Total
Project	2021	12,607	4.23	8.83	38.07	0.10	8.33	1.53	9.87	2.05	0.68	2.73

Source: ESA,2019

VMT from the Project's VMT analysis in the CEQA Thresholds Analysis for the 6220 Yucca Street Mixed-Use Project Hollywood, California, Gibson Transportation Consulting.

EMFAC2017
Region Type: Air District
Region: SOUTH COAST AQMD
Calendar Year: 2015,2016,2017, 2020, 2021, 2022
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Year	CO	NOx	PM	PM10	PM2_5	ROG	SOx
2016	1057.58130	260.76016	29.75769	29.20170	14.18094	113.62139	2.08925
2017	967.75699	234.69136	29.56187	29.00037	13.69598	104.25157	2.08336
2018	881.41642	215.51221	29.36772	28.80458	13.40510	96.08999	2.04958
2019	809.77993	198.28871	29.24651	28.68177	13.18603	89.22793	2.01141
2020	755.11613	180.36542	29.10139	28.53754	12.91494	83.47099	1.97781
2021	708.05999	164.22117	29.03712	28.47636	12.71401	78.70738	1.94447
2022	663.34791	143.60548	28.55244	27.99784	12.14397	73.72796	1.90291

Year	Miles/Day
2016	447346996.5
2017	456177177.5
2018	458594603.4
2019	461028055.9
2020	464792657.4
2021	468926961.8
2022	472038174.4

Criteria Pollutant Emission Factors (lbs/mile)

	CO	NOx	PM	PM10	PM2_5	ROG	SOx
2015	5.32E-03	1.31E-03	1.35E-04	1.33E-04	6.59E-05	5.75E-04	9.49E-06
2016	4.73E-03	1.17E-03	1.33E-04	1.31E-04	6.34E-05	5.08E-04	9.34E-06
2017	4.24E-03	1.03E-03	1.30E-04	1.27E-04	6.00E-05	4.57E-04	9.13E-06
2018	3.84E-03	9.40E-04	1.28E-04	1.26E-04	5.85E-05	4.19E-04	8.94E-06
2019	3.51E-03	8.60E-04	1.27E-04	1.24E-04	5.72E-05	3.87E-04	8.73E-06
2020	3.25E-03	7.76E-04	1.25E-04	1.23E-04	5.56E-05	3.59E-04	8.51E-06
2021	3.02E-03	7.00E-04	1.24E-04	1.21E-04	5.42E-05	3.36E-04	8.29E-06
2022	2.81E-03	6.08E-04	1.21E-04	1.19E-04	5.15E-05	3.12E-04	8.06E-06

6220 West Yucca Street Mixed Use Project
Air Quality and Greenhouse Gas Assessment

Paved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,P} = (k\ (sL)^{0.91} \times (W)^{1.02})$

Where:

sL = road surface silt loading (g/m^2)

Emission Factor (grams per VMT)		
	PM10	PM2.5
k	0.9979	0.2449
sL	0.1	0.1
W	2.4	2.4
$EF_{Dust,P}$	3.00E-01	7.36E-02

Sources:

SCAQMD, CalEEMod, Version 2013.2.2.

CARB, *Entrained Dust from Paved Road Travel: Emission Estimation Methodology Background Document* , (1997).

USEPA, *AP-42* , Fifth Edition, Volume I, Chapter 13.2.1 - Paved Roads, (2011).

ESA, 2019.

6220 West Yucca Street Mixed Use Project
Draft Environmental Impact Report
Air Quality and Greenhouse Gas Assessment

Criteria Pollutant Emissions (pounds/day) - With SAFE Adjustment Factors

	Year	VMT/day	ROG	NOx	CO	SOx	PM10 RD	PM10 Exh	PM10 Total	PM2_5 RD	PM2_5 Exh	PM2_5 Total
Project	2021	12,607	4.23	8.83	38.09	0.10	8.33	1.53	9.87	2.05	0.68	2.73

Source: ESA,2019

VMT from the Project's VMT analysis in the CEQA Thresholds Analysis for the 6220 Yucca Street Mixed-Use Project Hollywood, California, Gibson Transportation Consulting.

EMFAC2017
Region Type: Air District
Region: SOUTH COAST AQMD
Calendar Year: 2015,2016,2017, 2020, 2021, 2022
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Sum of emissions

	Tons/Day						
Year	**CO**	**NOx**	**PM**	**PM10**	**PM2_5**	**ROG**	**SOx**
2015	1132.58954	278.21881	28.86271	28.32720	14.03956	122.51332	2.02198
2016	1057.58130	260.76016	29.75769	29.20170	14.18094	113.62139	2.08925
2017	967.75699	234.69136	29.56187	29.00037	13.69598	104.25157	2.08336
2018	881.41642	215.51221	29.36772	28.80458	13.40510	96.08999	2.04958
2019	809.77993	198.28871	29.24651	28.68177	13.18603	89.22793	2.01141
2020	755.11613	180.36542	29.10139	28.53754	12.91494	83.47099	1.97781
2021	708.41402	164.25401	29.03712	28.50199	12.72546	78.72312	1.94447
2022	664.27660	143.66292	28.55244	28.04823	12.16583	73.75745	1.90291

VMT

Year	Miles/Day
2015	426161960
2016	447346996.5
2017	456177177.5
2018	458594603.4
2019	461028055.9
2020	464792657.4
2021	468926961.8
2022	472038174.4

Criteria Pollutant Emission Factors (lbs/mile)

	CO	**NOx**	**PM**	**PM10**	**PM2_5**	**ROG**	**SOx**
2015	5.32E-03	1.31E-03	1.35E-04	1.33E-04	6.59E-05	5.75E-04	9.49E-06
2016	4.73E-03	1.17E-03	1.33E-04	1.31E-04	6.34E-05	5.08E-04	9.34E-06
2017	4.24E-03	1.03E-03	1.30E-04	1.27E-04	6.00E-05	4.57E-04	9.13E-06
2018	3.84E-03	9.40E-04	1.28E-04	1.26E-04	5.85E-05	4.19E-04	8.94E-06
2019	3.51E-03	8.60E-04	1.27E-04	1.24E-04	5.72E-05	3.87E-04	8.73E-06
2020	3.25E-03	7.76E-04	1.25E-04	1.23E-04	5.56E-05	3.59E-04	8.51E-06
2021	3.02E-03	7.01E-04	1.24E-04	1.22E-04	5.43E-05	3.36E-04	8.29E-06
2022	2.81E-03	6.09E-04	1.21E-04	1.19E-04	5.15E-05	3.13E-04	8.06E-06

Notes: SAFE Adjustment Factors conservatively incorporated into applicable emission factors with ROG using TOG exhaust adjustments and PM brakewear, tirewear and running exhuast using PM running exhaust adjustments

6220 West Yucca Street Mixed Use Project
Air Quality and Greenhouse Gas Assessment

Paved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,P} = (k\ (sL)^{0.91} \times (W)^{1.02})$

Where:

$EF_{Dust,P}$ = Paved Road Dust Emission Factor (having the same units as k)
k = particle size multiplier
sL = road surface silt loading (g/m^2)
W = average fleet vehicle weight (tons) (CARB uses 2.4 tons as a fleet average vehicle weight factor)

	Emission Factor (grams per VMT)	
	PM10	PM2.5
k	0.9979	0.2449
sL	0.1	0.1
W	2.4	2.4
$EF_{Dust,P}$	3.00E-01	7.36E-02

Sources:

SCAQMD, CalEEMod, Version 2013.2.2.

CARB, *Entrained Dust from Paved Road Travel: Emission Estimation Methodology Background Document* , (1997).

USEPA, *AP-42* , Fifth Edition, Volume I, Chapter 13.2.1 - Paved Roads, (2011).

ESA, 2019.

EMFAC Off-Model Adjustment Factors to Account for the SAFE Vehicle Rule Part One

22-Nov-19

https://ww3.arb.ca.gov/msei/emfac_off_model_adjustment_factors_final_draft.pdf?utm_medium=email&utm_source=govdelivery

Original

Adjustment Factors for EMFAC2017 Gasoline Light Duty Vehicles					
Year	**NOx Exhaust**	**TOG Evaporative**	**TOG Exhaust**	**PM Exhaust**	**CO Exhaust**
2021	1.0002	1.0001	1.0002	1.0009	1.0005
2022	1.0004	1.0003	1.0004	1.0018	1.0014
2023	1.0007	1.0006	1.0007	1.0032	1.0027
2024	1.0012	1.001	1.0011	1.0051	1.0044
2025	1.0018	1.0016	1.0016	1.0074	1.0065
2026	1.0023	1.0022	1.002	1.0091	1.0083
2027	1.0028	1.0028	1.0024	1.0105	1.0102
2028	1.0034	1.0035	1.0028	1.0117	1.012
2029	1.004	1.0042	1.0032	1.0129	1.0138
2030	1.0047	1.0051	1.0037	1.0142	1.0156
2031	1.0054	1.0061	1.0042	1.0155	1.0173
2032	1.0061	1.0072	1.0047	1.0169	1.0189
2033	1.0068	1.0083	1.0052	1.0182	1.0204
2034	1.0075	1.0095	1.0058	1.0196	1.0218
2035	1.0081	1.0108	1.0063	1.021	1.0232
2036	1.0088	1.0121	1.0069	1.0223	1.0244
2037	1.0094	1.0134	1.0074	1.0236	1.0255
2038	1.0099	1.0148	1.0079	1.0248	1.0265
2039	1.0104	1.0161	1.0085	1.0259	1.0274
2040	1.0109	1.0174	1.009	1.027	1.0281
2041	1.0113	1.0186	1.0095	1.0279	1.0288
2042	1.0116	1.0198	1.0099	1.0286	1.0294
2043	1.0119	1.0207	1.0103	1.0293	1.0299
2044	1.0122	1.0216	1.0106	1.0299	1.0303
2045	1.0124	1.0225	1.0109	1.0303	1.0306
2046	1.0125	1.0233	1.0111	1.0308	1.0309
2047	1.0127	1.024	1.0113	1.0311	1.0311
2048	1.0128	1.0246	1.0115	1.0314	1.0313
2049	1.0128	1.0252	1.0116	1.0316	1.0315
2050	1.0129	1.0257	1.0117	1.0318	1.0316

B-5 Operational Stationary Source Emissions

Yucca Argyle Project
Draft Environmental Impact Report
Air Quality Assessment

Project Operational Emissions - Emergency Generator

Standby Emergency Generator			
Rating:	250	kW	*(kW, HP rating reflect total sitewide need)*
	335	HP	*(conversion from kW to hp)*
Load Factor:	0.74		*(based on CalEEMod Generator Set Load Factor)*
Engine Emissions Tier:	Rule 1470 Compliant		*(compliance with CARB diesel regulations)*
Number of Units:	1		*(kW, HP rating reflect total sitewide need)*
Operating Hours per Unit:	2	hours/day	*(testing/maintenance)*
	50	hours/year	*(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)*

Emergency Generator Emissions

Units	Criteria Pollutants [1, 2, 3]					
	VOC	NO_X	CO	SO_2	PM10	PM2.5
g/kW-hr			—	—	—	—
g/HP-hr	0.15	2.85	2.60	5.50E-05	0.014	0.014
lbs/hr	0.08	1.56	1.42	0.00	0.01	0.01
lbs/day	0.16	3.12	2.84	0.00	0.02	0.02
lbs/yr	4.10	77.88	71.05	0.00	0.38	0.38
tons/yr	2.05E-03	3.89E-02	3.55E-02	7.52E-07	1.91E-04	1.91E-04
metric tons/yr	—	—	—	—	—	—

Notes:

1. Emission factors for VOC, NOX, CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
2 Emission factor for SO_2: U.S. Environmental Protection Agency, *AP-42 Compilation of Air Pollutant Emission Factors* , Fifth Edition, Section 3.4, Table 3.4-1. Emission Factor for SO_2 is based on 15 ppm (0.0015%) S1 and assumes complete conversion to SO_2.

Source: ESA, 2019

6220 West Yucca Project
Air Quality Assessment

Project - Estimated Charbroiler Stationary Source Emissions

Source[1]	Uncontrolled Emission Factors[2,3] (lb/1000 lb)				Quantity[4]	Emissions Controls[5] (percent reduction)			Controlled Emissions (pounds/day)		
	VOC	PM	PM10	PM2.5	(lb/day)	VOC	PM10	PM2.5	VOC	PM10	PM2.5
Project											
Charbroiler - 25% fat Hamburger	3.94	32.65	22.86	13.71	116.5	86%	83%	83%	0.06	0.45	0.27
Charbroiler - Chicken	1.82	10.48	7.34	4.40	116.5	86%	83%	83%	0.03	0.15	0.09
Emissions									**0.09**	**0.60**	**0.36**

Notes:

1. Source type is based on the meat with the highest emission factors.
2. South Coast Air Quality Management District, Emission Factors for Commercial Cooking Operations, http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1138/par1138pdsr_appendixi.pdf?sfvrsn=2. Accessed November 2017.
3. South Coast Air Quality Management District, Final –Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, Appendix A, http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/particulate-matter-(pm)-2.5-significance-thresholds-and-calculation-methodology/final_pm2_5methodology.pdf?sfvrsn=2. Accessed November 2017. Per Appendix A, for cooking (baking, charbroiling, deep fat frying), PM10 is 0.7 fraction of PM and PM2.5 is 0.42 fraction of PM.
4. Quantity of meats charbroiled is based on the average pounds of meat cooked per restaurant consisting of 50% hamburger meat and 50% chicken.
5. South Coast Air Quality Management District Rule 1138 (Control of Emissions from Restaurant Operations) regulates PM10 and VOC emissions from fast-food restaurants with charbroilers. Catalytic oxidizers reduce VOC emissions by approximately 86 percent and PM emissions by approximately 83 percent.

Source: ESA 2019

Exhibit C

Construction Health Risk Assessment Calculations

ESA

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Construction Health Risk Assessment - OEHHA 2003 - Unmitigated

Off-Road Heavy-Duty Construction Equipment Emission Rates

Construction Phase	DPM Source	Year	Daily DPM Emissions [a] (pounds/day)	Work Days per Year (days/year)	Work Hours per Day (hours/day)	Emissions Rate during Work Period (grams/second)	Percent of Total Emissions
Off-Road Equipment							
Demolition	Off-Road Equipment	Year 1	1.9402	15	8	3.06E-02	5%
Site Preparation	Off-Road Equipment	Year 1	2.3480	8	8	3.70E-02	3%
Grading/Excavation	Off-Road Equipment	Year 1	1.9527	86	8	3.08E-02	29%
Building Construction-1	Off-Road Equipment	Year 1	1.0032	152	8	1.58E-02	26%
Building Construction-1	Off-Road Equipment	Year 2	0.8893	129	8	1.40E-02	19%
Building Construction-2	Off-Road Equipment	Year 2	0.3429	89	8	5.40E-03	5%
Paving	Off-Road Equipment	Year 2	0.8673	87	8	1.37E-02	13%
Architectural Coating	Off-Road Equipment	Year 2	0.0000	89	8	0.00E+00	0%
Maximum 12-Month Emissions (for Chronic HI analysis)	*Off-Road Equipment*		*3.1145*	*261*	*8*	*4.91E-02*	

Notes:

a. California Air Resources Board, California Emissions Estimator Model (CalEEMod).

Source: ESA, 2020

On-Road Construction Truck Emission Rates

Construction Phase	DPM Source	Year	Total One-Way Truck Trips	Work Days per Year (days/year)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day [a] (miles)	DPM Running Emissions Factor [b] (grams/mile)	Emissions Rate during Work Period (grams/second)
On-Road Trucks								
Demolition	On-Road HHDT Trucks	Year 1	1000	15	8	0.51	0.1856	2.21E-04
Site Preparation	—	Year 1	0	8	0	0	0	0
Grading/Excavation	On-Road HHDT Trucks	Year 1	17200	86	8	0.51	0.1856	6.63E-04
Building Construction-1	On-Road MHDT/HHDT Trucks	Year 1	11096	152	8	0.51	0.1140	1.49E-04
Building Construction-1	On-Road MHDT/HHDT Trucks	Year 2	9417	129	8	0.51	0.0933	1.22E-04
Building Construction-2	On-Road MHDT/HHDT Trucks	Year 2	6497	89	8	0.51	0.0933	1.22E-04
Paving	—	Year 2	0	87	0	0	0	0
Architectural Coating	—	Year 2	0	89	0	0	0	0
Maximum 12-Month Emissions (for Chronic HI analysis)	*On-Road MHDT/HHDT Trucks*		*29975*	*261*	*8*	*0.51*	*0.1358*	*2.76E-04*

Notes:

a. The portion of the on-road trip length within a 1/4 mile of the Project Site.

b. California Air Resources Board, EMFAC2017 on-road vehicle emissions model.

Source: ESA, 2020

Idling Construction Truck Emission Rates

Construction Phase	DPM Source	Year	Total Number of Trucks	Work Days per Year (days/year)	Work Hours per Day (hours/day)	Idling Time per Truck (minutes)	DPM Idling Emissions Factor [a] (grams/min)	Emissions Rate during Work Period (grams/second)
On-Road Trucks								
Demolition	Idling HHDT Trucks	Year 1	500	15	8	15	7.20E-03	1.25E-04
Site Preparation	—	Year 1	0	8	0	0	0	0
Grading/Excavation	Idling HHDT Trucks	Year 1	8600	86	8	15	7.20E-03	3.75E-04
Building Construction-1	Idling MHDT/HHDT Trucks	Year 1	5548	152	8	15	5.70E-03	1.08E-04
Building Construction-1	Idling MHDT/HHDT Trucks	Year 2	4709	129	8	15	4.80E-03	9.13E-05
Building Construction-2	Idling MHDT/HHDT Trucks	Year 2	3249	89	8	15	4.80E-03	9.13E-05
Paving	—	Year 2	0	87	0	0	0	0
Architectural Coating	—	Year 2	0	89	0	0	0	0
Maximum 12-Month Emissions (for Chronic HI analysis)	*Idling MHDT/HHDT Trucks*		*14988*	*261*	*8*	*15*	6.11E-03	*1.83E-04*

Notes:

a. California Air Resources Board, EMFAC2017 on-road vehicle emissions model.

Source: ESA, 2020

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Construction Health Risk Assessment - OEHHA 2003 - Unmitigated

AERMOD Source Characteristics

Emission Source	Source Type	Number of Sources	Length of Line (m)	Source Group Unitized Emission Rate (g/s)	Release Height (m)	Length of Side X (m)	Length of Side Y (m)	Initial Lateral (m)	Initial Vertical (m)	Plume Height (m)	Plume Width (m)	Exit Temp (°F)	Inside Diameter (ft)	Exit Flow Rate (ft^3/s)
Source Group 1														
Off-Road Heavy-Duty Construction Equipment	Volume	#1-12	n/a	0.0588	5	18	18	4.19	1.16	n/a	n/a	n/a	n/a	n/a
Off-Road Heavy-Duty Construction Equipment	Volume	#16-20	n/a	0.0588	5	18	18	4.19	1.16	n/a	n/a	n/a	n/a	n/a
Source Group 2														
On-Road Haul and Vendor Trucks 1	Line-Volume	1	1850.1	0.5480	5	14	14	n/a	n/a	10.2	20.0	n/a	n/a	n/a
On-Road Haul and Vendor Trucks 2	Line-Volume	1	576.1	0.1706	5	4	4	n/a	n/a	10.2	10.0	n/a	n/a	n/a
On-Road Haul and Vendor Trucks 3	Line-Volume	1	246.1	0.0729	5	4	4	n/a	n/a	10.2	10.0	n/a	n/a	n/a
On-Road Haul and Vendor Trucks 4	Line-Volume	1	502.8	0.1489	5	4	4	n/a	n/a	10.2	10.0	n/a	n/a	n/a
On-Road Haul and Vendor Trucks 5	Line-Volume	1	201.3	0.0596	5	4	4	n/a	n/a	10.2	10.0	n/a	n/a	n/a
Source Group 3														
Idling Haul and Vendor Trucks 3	Volume	#13-15		0.3333	5	26	26	6.05	1.16	n/a	n/a	n/a	n/a	n/a

Source: ESA, 2020

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AERMOD Results

Emission Source	Source Type	Source Group Unitized AERMOD Concentration ($\mu g/m^3$)			
		East	South	North	West
Source Group 1		39.81	38.57	46.35	18.80
Off-Road Heavy-Duty Construction Equipment	*Volume*				
	UTM X	377895.00	377865.00	377860.00	377865.00
	UTMY	3774430.00	3774400.00	3774400.00	3774400.00
Source Group 2		3.51	3.08	5.31	2.50
On-Road Haul and Vendor Trucks 1	*Line-Volume*				
On-Road Haul and Vendor Trucks 2	*Line-Volume*				
On-Road Haul and Vendor Trucks 3	*Line-Volume*				
	UTM X	377895.00	377865.00	377860.00	377865.00
	UTMY	3774430.00	3774400.00	3774400.00	3774400.00
Source Group 3		58.61	35.95	38.90	25.79
Idling Haul and Vendor Trucks 3	*Volume*				
	UTM X	377895.00	377865.00	377860.00	377865.00
	UTMY	3774430.00	3774400.00	3774400.00	3774400.00

Source: Lakes Environmental, AERMOD View 9.8.3 (Version 19191), 2020; ESA, 2020

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Maximum Individual Cancer Risk Calculations - Sensitive Receptors located East of the Project Site

Concentrations

	Construction Phase/Equipment	Emissions Group 1 (0.25 years)	2 (2 years)	3 (67.75 years)
Days	Demolition Year 1	15		
CONC	Off-Road Equipment	1.22E+00		
	On-Road HHDT Trucks	7.76E-04		
	Idling HHDT Trucks	7.33E-03		
Days	Site Preparation Year 1	8		
CONC	Off-Road Equipment	1.47E+00		
Days	Grading/Excavation Year 1	43	43	
CONC	Off-Road Equipment	1.22E+00	1.22E+00	
	On-Road HHDT Trucks	2.33E-03	2.33E-03	
	Idling HHDT Trucks	2.20E-02	2.20E-02	
Days	Building Construction-1 Year 1		152	
CONC	Off-Road Equipment		6.29E-01	
	On-Road MHDT/HHDT Trucks		5.22E-04	
	Idling MHDT/HHDT Trucks		6.35E-03	
Days	Building Construction-1 Year 2		129	
CONC	Off-Road Equipment		5.58E-01	
	On-Road MHDT/HHDT Trucks		4.27E-04	
	Idling MHDT/HHDT Trucks		5.35E-03	
Days	Building Construction-2 Year 2		89	
CONC	Off-Road Equipment		2.15E-01	
	On-Road MHDT/HHDT Trucks		4.27E-04	
	Idling MHDT/HHDT Trucks		5.35E-03	
Days	Paving Year 2 (Partial Overlap with B.C. Year 2; 43 Days Non-Overlap)		87	
CONC	Off-Road Equipment		5.44E-01	
	—		0.00E+00	
	—		0.00E+00	
Days	Architectural Coating Year 2 (Overlaps with B.C. Year 2)		89	
CONC	Off-Road Equipment		0.00E+00	
	Work Days in Emissions Group	66	456	
	Average Annual Concentration in Emissions Group	9.19E-01	3.97E-01	

Source: ESA, 2020

Cancer Risk Calculations

	Parameter	Emissions Group 1 (0.25 years)	2 (2 years)	3 (67.75 years)	Total
DBR	Daily Breathing Rate (L/kg (body weight) per day)	581	581	581	
A	Inhalation absorption factor (default = 1).	1	1	1	
EF	Exposure Frequency (days/year)	350	350	350	
ED	Exposure Duration (years)	0.25	2	67.75	
EVF	Exposure Value Factor (unitless)	1	1	1	
AT	Averaged Exposure Time Period (days)	25550	25550	25550	
CONC	Toxic Air Contaminant Concentration ($\mu g/m^3$)	9.19E-01	3.97E-01	0.00E+00	
DOSE	*[= CONC × DBR × A × EF × ED × FAH / AT]* (mg/kg-d)	1.83E+00	6.32E+00	0.00E+00	
CPF	Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$				
	Diesel Particulate Matter	1.1	1.1	1.1	
RISK	Cancer Risk (in one million) *[= DOSE × CPF × ASF]*	2.01E+00	6.96E+00	0.00E+00	**8.97E+00**

Sources:

SCAQMD, Risk Assessment Procedures for Rules 1401 and 212, Appendix L, Version 7.0, 2012.

http://www.aqmd.gov/docs/default-source/planning/risk-assessment/risk-assessment-procedures-v-7.pdf?sfvrsn=4

http://www.aqmd.gov/docs/default-source/planning/risk-assessment/attachment-l.pdf?sfvrsn=4

ESA, 2020

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Maximum Individual Cancer Risk Calculations - Sensitive Receptors located South of the Project Site

Concentrations

	Construction Phase/Equipment	Emissions Group 1 (0.25 years)	2 (2 years)	3 (67.75 years)
Days	Demolition Year 1	15		
CONC	Off-Road Equipment	1.18E+00		
	On-Road HHDT Trucks	6.81E-04		
	Idling HHDT Trucks	4.49E-03		
Days	Site Preparation Year 1	8		
CONC	Off-Road Equipment	1.43E+00		
Days	Grading/Excavation Year 1	43	43	
CONC	Off-Road Equipment	1.19E+00	1.19E+00	
	On-Road HHDT Trucks	2.04E-03	2.04E-03	
	Idling HHDT Trucks	1.35E-02	1.35E-02	
Days	Building Construction-1 Year 1		152	
CONC	Off-Road Equipment		6.09E-01	
	On-Road MHDT/HHDT Trucks		4.58E-04	
	Idling MHDT/HHDT Trucks		3.90E-03	
Days	Building Construction-1 Year 2		129	
CONC	Off-Road Equipment		5.40E-01	
	On-Road MHDT/HHDT Trucks		3.75E-04	
	Idling MHDT/HHDT Trucks		3.28E-03	
Days	Building Construction-2 Year 2		89	
CONC	Off-Road Equipment		2.08E-01	
	On-Road MHDT/HHDT Trucks		3.75E-04	
	Idling MHDT/HHDT Trucks		3.28E-03	
Days	Paving Year 2 (Partial Overlap with B.C. Year 2; 43 Days Non-Overlap)		87	
CONC	Off-Road Equipment		5.27E-01	
	—		0.00E+00	
	—		0.00E+00	
Days	Architectural Coating Year 2 (Overlaps with B.C. Year 2)		89	
CONC	Off-Road Equipment		0.00E+00	
	Work Days in Emissions Group	66	456	
	Average Annual Concentration in Emissions Group	8.86E-01	3.83E-01	

Source: ESA, 2020

Cancer Risk Calculations

	Parameter	Emissions Group 1 (0.25 years)	2 (2 years)	3 (67.75 years)	Total
DBR	Daily Breathing Rate (L/kg (body weight) per day)	581	581	581	
A	Inhalation absorption factor (default = 1).	1	1	1	
EF	Exposure Frequency (days/year)	350	350	350	
ED	Exposure Duration (years)	0.25	2	67.75	
EVF	Exposure Value Factor (unitless)	1	1	1	
AT	Averaged Exposure Time Period (days)	25550	25550	25550	
CONC	Toxic Air Contaminant Concentration ($\mu g/m^3$)	8.86E-01	3.83E-01	0.00E+00	
DOSE	*[= CONC × DBR × A × EF × ED × FAH / AT]* (mg/kg-d)	1.76E+00	6.10E+00	0.00E+00	
CPF	Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$				
	Diesel Particulate Matter	1.1	1.1	1.1	
RISK	Cancer Risk (in one million) *[= DOSE × CPF × ASF]*	1.94E+00	6.71E+00	0.00E+00	**8.65E+00**

Sources:

SCAQMD, Risk Assessment Procedures for Rules 1401 and 212, Appendix L, Version 7.0, 2012.

http://www.aqmd.gov/docs/default-source/planning/risk-assessment/risk-assessment-procedures-v-7.pdf?sfvrsn=4

http://www.aqmd.gov/docs/default-source/planning/risk-assessment/attachment-l.pdf?sfvrsn=4

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Maximum Individual Cancer Risk Calculations - Sensitive Receptors located North of the Project Site

Concentrations

	Construction Phase/Equipment	Emissions Group 1 (0.25 years)	2 (2 years)	3 (67.75 years)
Days	Demolition Year 1	15		
CONC	Off-Road Equipment	1.42E+00		
	On-Road HHDT Trucks	1.17E-03		
	Idling HHDT Trucks	4.86E-03		
Days	Site Preparation Year 1	8		
CONC	Off-Road Equipment	1.71E+00		
Days	Grading/Excavation Year 1	43	43	
CONC	Off-Road Equipment	1.43E+00	1.43E+00	
	On-Road HHDT Trucks	3.52E-03	3.52E-03	
	Idling HHDT Trucks	1.46E-02	1.46E-02	
Days	Building Construction-1 Year 1		152	
CONC	Off-Road Equipment		7.32E-01	
	On-Road MHDT/HHDT Trucks		7.89E-04	
	Idling MHDT/HHDT Trucks		4.22E-03	
Days	Building Construction-1 Year 2		129	
CONC	Off-Road Equipment		6.49E-01	
	On-Road MHDT/HHDT Trucks		6.46E-04	
	Idling MHDT/HHDT Trucks		3.55E-03	
Days	Building Construction-2 Year 2		89	
CONC	Off-Road Equipment		2.50E-01	
	On-Road MHDT/HHDT Trucks		6.46E-04	
	Idling MHDT/HHDT Trucks		3.55E-03	
Days	Paving Year 2 (Partial Overlap with B.C. Year 2; 43 Days Non-Overlap)		87	
CONC	Off-Road Equipment		6.33E-01	
	—		0.00E+00	
	—		0.00E+00	
Days	Architectural Coating Year 2 (Overlaps with B.C. Year 2)		89	
CONC	Off-Road Equipment		0.00E+00	
	Work Days in Emissions Group	66	456	
	Average Annual Concentration in Emissions Group	1.06E+00	4.61E-01	

Source: ESA, 2020

Cancer Risk Calculations

	Parameter	Emissions Group 1 (0.25 years)	2 (2 years)	3 (67.75 years)	Total
DBR	Daily Breathing Rate (L/kg (body weight) per day)	581	581	581	
A	Inhalation absorption factor (default = 1).	1	1	1	
EF	Exposure Frequency (days/year)	350	350	350	
ED	Exposure Duration (years)	0.25	2	67.75	
EVF	Exposure Value Factor (unitless)	1	1	1	
AT	Averaged Exposure Time Period (days)	25550	25550	25550	
CONC	Toxic Air Contaminant Concentration ($\mu g/m^3$)	1.06E+00	4.61E-01	0.00E+00	
DOSE	*[= CONC × DBR × A × EF × ED × FAH / AT]* (mg/kg-d)	2.12E+00	7.33E+00	0.00E+00	
CPF	Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$				
	Diesel Particulate Matter	1.1	1.1	1.1	
RISK	Cancer Risk (in one million) [= *DOSE × CPF × ASF]*	2.33E+00	8.06E+00	0.00E+00	**1.04E+01**

Sources:

SCAQMD, Risk Assessment Procedures for Rules 1401 and 212, Appendix L, Version 7.0, 2012.

http://www.aqmd.gov/docs/default-source/planning/risk-assessment/risk-assessment-procedures-v-7.pdf?sfvrsn=4

http://www.aqmd.gov/docs/default-source/planning/risk-assessment/attachment-l.pdf?sfvrsn=4

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Maximum Individual Cancer Risk Calculations - Sensitive Receptors located West of the Project Site

Concentrations by Age Bin

		Emissions Group		
	Construction Phase/Equipment	**1 (0.25 years)**	**2 (2 years)**	**3 (67.75 years)**
Days	Demolition Year 1	15		
CONC	Off-Road Equipment	5.74E-01		
	On-Road HHDT Trucks	5.52E-04		
	Idling HHDT Trucks	3.22E-03		
Days	Site Preparation Year 1	8		
CONC	Off-Road Equipment	6.95E-01		
Days	Grading/Excavation Year 1	43	43	
CONC	Off-Road Equipment	5.78E-01	5.78E-01	
	On-Road HHDT Trucks	1.66E-03	1.66E-03	
	Idling HHDT Trucks	9.67E-03	9.67E-03	
Days	Building Construction-1 Year 1		152	
CONC	Off-Road Equipment		2.97E-01	
	On-Road MHDT/HHDT Trucks		3.72E-04	
	Idling MHDT/HHDT Trucks		2.79E-03	
Days	Building Construction-1 Year 2		129	
CONC	Off-Road Equipment		2.63E-01	
	On-Road MHDT/HHDT Trucks		3.04E-04	
	Idling MHDT/HHDT Trucks		2.35E-03	
Days	Building Construction-2 Year 2		89	
CONC	Off-Road Equipment		1.02E-01	
	On-Road MHDT/HHDT Trucks		3.04E-04	
	Idling MHDT/HHDT Trucks		2.35E-03	
Days	Paving Year 2 (Partial Overlap with B.C. Year 2; 43 Days Non-Overlap)		87	
CONC	Off-Road Equipment		2.57E-01	
	—		0.00E+00	
	—		0.00E+00	
Days	Architectural Coating Year 2 (Overlaps with B.C. Year 2)		89	
CONC	Off-Road Equipment		0.00E+00	
	Work Days in Emissions Group	66	456	
	Average Annual Concentration in Emissions Group	4.34E-01	1.88E-01	

Source: ESA, 2020

Cancer Risk Calculations

		Emissions Group			
	Parameter	**1 (0.25 years)**	**2 (2 years)**	**3 (67.75 years)**	**Total**
DBR	Daily Breathing Rate (L/kg (body weight) per day)	581	581	581	
A	Inhalation absorption factor (default = 1).	1	1	1	
EF	Exposure Frequency (days/year)	350	350	350	
ED	Exposure Duration (years)	0.25	2	67.75	
EVF	Exposure Value Factor (unitless)	1	1	1	
AT	Averaged Exposure Time Period (days)	25550	25550	25550	
CONC	Toxic Air Contaminant Concentration ($\mu g/m^3$)	4.34E-01	1.88E-01	0.00E+00	
DOSE	*[= CONC × DBR × A × EF × ED × FAH / AT]* (mg/kg-d)	8.63E-01	2.99E+00	0.00E+00	
CPF	Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$				
	Diesel Particulate Matter	1.1	1.1	1.1	
RISK	Cancer Risk (in one million) [= *DOSE × CPF × ASF]*	9.49E-01	3.28E+00	0.00E+00	**4.23E+00**

Sources:

SCAQMD, Risk Assessment Procedures for Rules 1401 and 212, Appendix L, Version 7.0, 2012.

http://www.aqmd.gov/docs/default-source/planning/risk-assessment/risk-assessment-procedures-v-7.pdf?sfvrsn=4

http://www.aqmd.gov/docs/default-source/planning/risk-assessment/attachment-l.pdf?sfvrsn=4

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Maximum Non-cancer Chronic Hazards / Toxicological Endpoints*

Receptor Group	Pollutant	CREL[1]	CONC	WFrac	$CONC_{WF}$	HI	ALIM	BN	CVS	DEV	ENDC	EYE	HEM	IMMUN	KIDN	NS	REPRO	RESP	SK	Threshold	Over?
MEI Sensitive - East	DPM	5.00E+00	1.96E+00	1.00E+00	1.96E+00	3.93E-01	-	-	-	-	-	-	-	-	-	-	-	3.93E-01	-	1.0	NO
MEI Sensitive - South	DPM	5.00E+00	1.90E+00	1.00E+00	1.90E+00	3.80E-01	-	-	-	-	-	-	-	-	-	-	-	3.80E-01	-	1.0	NO
MEI Sensitive - North	DPM	5.00E+00	2.28E+00	1.00E+00	2.28E+00	4.56E-01	-	-	-	-	-	-	-	-	-	-	-	4.56E-01	-	1.0	NO
MEI Sensitive - West	DPM	5.00E+00	9.28E-01	1.00E+00	9.28E-01	1.86E-01	-	-	-	-	-	-	-	-	-	-	-	1.86E-01	-	1.0	NO

Sources:

1. California Air Resources Board, "Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values" and "OEHHA/ARB Approved Chronic Reference Exposure Levels and Target Organs," http://www.arb.ca.gov/toxics/healthval/healthval.htm. Tables last updated: January 30, 2014. Downloaded 03/13/2014.

Where:

$CONC_{WF}$	Pollutant Concentration ($\mu g/m^3$) multiplied by the weight fraction
CREL	Chronic Reference Exposure Level
HI	Hazard Index
MEI	Maximally Exposed Individual
WFrac	Weight fraction of speciated component

* Key to Toxicological Endpoints

ALIM	Alimentary Tract	EYE	Eye	NS	Nervous System
BN	Bone	HEM	Hematologic System	REPRO	Reproductive System
CVS	Cardiovascular System	IMMUN	Immune System	RESP	Respiratory System
DEV	Developmental System	KIDN	Kidney	SK	Skin
ENDC	Endocrine System				

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Off-Road Heavy-Duty Construction Equipment Emission Rates

Construction Phase	DPM Source	Year	Daily DPM Emissions [a] (pounds/day)	Work Days per Year (days/year)	Work Hours per Day (hours/day)	Emissions Rate during Work Period (grams/second)	Percent of Total Emissions
Off-Road Equipment							
Demolition	Off-Road Equipment	Year 1	0.0615	15	8	9.69E-04	4%
Site Preparation	Off-Road Equipment	Year 1	0.0569	8	8	8.96E-04	2%
Grading/Excavation	Off-Road Equipment	Year 1	0.0970	86	8	1.53E-03	38%
Building Construction-1	Off-Road Equipment	Year 1	0.0284	152	8	4.47E-04	20%
Building Construction-1	Off-Road Equipment	Year 2	0.0284	129	8	4.47E-04	17%
Building Construction-2	Off-Road Equipment	Year 2	0.0126	89	8	1.98E-04	5%
Paving	Off-Road Equipment	Year 2	0.0375	87	8	5.91E-04	15%
Architectural Coating	Off-Road Equipment	Year 2	0.0000	89	8	0.00E+00	0%
Maximum 12-Month Emissions (for Chronic HI analysis)	*Off-Road Equipment*		*0.1305*	*261*	*8*	*2.05E-03*	

Notes:

a. California Air Resources Board, California Emissions Estimator Model (CalEEMod).

Source: ESA, 2020

On-Road Construction Truck Emission Rates

Construction Phase	DPM Source	Year	Total One-Way Truck Trips	Work Days per Year (days/year)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day [a] (miles)	DPM Running Emissions Factor [b] (grams/mile)	Emissions Rate during Work Period (grams/second)
On-Road Trucks								
Demolition	On-Road HHDT Trucks	Year 1	1000	15	8	0.51	0.1856	2.21E-04
Site Preparation	—	Year 1	0	8	0	0	0	0
Grading/Excavation	On-Road HHDT Trucks	Year 1	17200	86	8	0.51	0.1856	6.63E-04
Building Construction-1	On-Road MHDT/HHDT Trucks	Year 1	11096	152	8	0.51	0.1140	1.49E-04
Building Construction-1	On-Road MHDT/HHDT Trucks	Year 2	9417	129	8	0.51	0.0933	1.22E-04
Building Construction-2	On-Road MHDT/HHDT Trucks	Year 2	6497	89	8	0.51	0.0933	1.22E-04
Paving	—	Year 2	0	87	0	0	0	0
Architectural Coating	—	Year 2	0	89	0	0	0	0
Maximum 12-Month Emissions (for Chronic HI analysis)	*On-Road MHDT/HHDT Trucks*		*29975*	*261*	*8*	*0.51*	*0.1358*	*2.76E-04*

Notes:

a. The portion of the on-road trip length within a 1/4 mile of the Project Site.

b. California Air Resources Board, EMFAC2017 on-road vehicle emissions model

Source: ESA, 2020

Idling Construction Truck Emission Rates

Construction Phase	DPM Source	Year	Total Number of Trucks	Work Days per Year (days/year)	Work Hours per Day (hours/day)	Idling Time per Truck (minutes)	DPM Idling Emissions Factor [a] (grams/min)	Emissions Rate during Work Period (grams/second)
On-Road Trucks								
Demolition	Idling HHDT Trucks	Year 1	500	15	8	15	7.20E-03	1.25E-04
Site Preparation	—	Year 1	0	8	0	0	0	0
Grading/Excavation	Idling HHDT Trucks	Year 1	8600	86	8	15	7.20E-03	3.75E-04
Building Construction-1	Idling MHDT/HHDT Trucks	Year 1	5548	152	8	15	5.70E-03	1.08E-04
Building Construction-1	Idling MHDT/HHDT Trucks	Year 2	4709	129	8	15	4.80E-03	9.13E-05
Building Construction-2	Idling MHDT/HHDT Trucks	Year 2	3249	89	8	15	4.80E-03	9.13E-05
Paving	—	Year 2	0	87	0	0	0	0
Architectural Coating	—	Year 2	0	89	0	0	0	0
Maximum 12-Month Emissions (for Chronic HI analysis)	*Idling MHDT/HHDT Trucks*		*14988*	*261*	*8*	*15*	6.11E-03	*1.83E-04*

Notes:

a. California Air Resources Board, EMFAC2017 on-road vehicle emissions model.

Source: ESA, 2020

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AERMOD Source Characteristics

Emission Source	Source Type	Number of Sources	Length of Line (m)	Source Group Unitized Emission Rate (g/s)	Release Height (m)	Length of Side X (m)	Length of Side Y (m)	Initial Lateral (m)	Initial Vertical (m)	Plume Height (m)	Plume Width (m)	Exit Temp (°F)	Inside Diameter (ft)	Exit Flow Rate (ft^3/s)
Source Group 1														
Off-Road Heavy-Duty Construction Equipment	Volume	#1-12	n/a	0.0588	5	18	18	4.19	1.16	n/a	n/a	n/a	n/a	n/a
Off-Road Heavy-Duty Construction Equipment	Volume	#16-20	n/a	0.0588	5	18	18	4.19	1.16	n/a	n/a	n/a	n/a	n/a
Source Group 2														
On-Road Haul and Vendor Trucks 1	Line-Volume	1	1850.1	0.5480	5	14	14	n/a	n/a	10.2	20.0	n/a	n/a	n/a
On-Road Haul and Vendor Trucks 2	Line-Volume	1	576.1	0.1706	5	4	4	n/a	n/a	10.2	10.0	n/a	n/a	n/a
On-Road Haul and Vendor Trucks 3	Line-Volume	1	246.1	0.0729	5	4	4	n/a	n/a	10.2	10.0	n/a	n/a	n/a
On-Road Haul and Vendor Trucks 4	Line-Volume	1	502.8	0.1489	5	4	4	n/a	n/a	10.2	10.0	n/a	n/a	n/a
On-Road Haul and Vendor Trucks 5	Line-Volume	1	201.3	0.0596	5	4	4	n/a	n/a	10.2	10.0	n/a	n/a	n/a
Source Group 3														
Idling Haul and Vendor Trucks 3	Volume	#13-15		0.3333	5	26	26	6.05	1.16	n/a	n/a	n/a	n/a	n/a

Source: ESA, 2020

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AERMOD Results

Emission Source	Source Type	Source Group Unitized AERMOD Concentration ($\mu g/m^3$)			
		East	South	North	West
Source Group 1		39.81	38.57	46.35	18.80
Off-Road Heavy-Duty Construction Equipment	*Volume*				
	UTM X	377895.00	377865.00	377860.00	377865.00
	UTMY	3774430.00	3774400.00	3774400.00	3774400.00
Source Group 2		3.51	3.08	5.31	2.50
On-Road Haul and Vendor Trucks 1	*Line-Volume*				
On-Road Haul and Vendor Trucks 2	*Line-Volume*				
On-Road Haul and Vendor Trucks 3	*Line-Volume*				
	UTM X	377895.00	377865.00	377860.00	377865.00
	UTMY	3774430.00	3774400.00	3774400.00	3774400.00
Source Group 3		58.61	35.95	38.90	25.79
Idling Haul and Vendor Trucks 3	*Volume*				
	UTM X	377895.00	377865.00	377860.00	377865.00
	UTMY	3774430.00	3774400.00	3774400.00	3774400.00

Source: Lakes Environmental, AERMOD View 9.8.3 (Version 19191), 2020; ESA, 2020

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Maximum Individual Cancer Risk Calculations - Sensitive Receptors located East of the Project Site

Concentrations

	Construction Phase/Equipment	Emissions Group 1 (0.25 years)	2 (2 years)	3 (67.75 years)
Days	Demolition Year 1	15		
CONC	Off-Road Equipment	3.86E-02		
	On-Road HHDT Trucks	7.76E-04		
	Idling HHDT Trucks	7.33E-03		
Days	Site Preparation Year 1	8		
CONC	Off-Road Equipment	3.57E-02		
Days	Grading/Excavation Year 1	43	43	
CONC	Off-Road Equipment	6.08E-02	6.08E-02	
	On-Road HHDT Trucks	2.33E-03	2.33E-03	
	Idling HHDT Trucks	2.20E-02	2.20E-02	
Days	Building Construction-1 Year 1		152	
CONC	Off-Road Equipment		1.78E-02	
	On-Road MHDT/HHDT Trucks		5.22E-04	
	Idling MHDT/HHDT Trucks		6.35E-03	
Days	Building Construction-1 Year 2		129	
CONC	Off-Road Equipment		1.78E-02	
	On-Road MHDT/HHDT Trucks		4.27E-04	
	Idling MHDT/HHDT Trucks		5.35E-03	
Days	Building Construction-2 Year 2		89	
CONC	Off-Road Equipment		7.90E-03	
	On-Road MHDT/HHDT Trucks		4.27E-04	
	Idling MHDT/HHDT Trucks		5.35E-03	
Days	Paving Year 2 (Partial Overlap with B.C. Year 2; 43 Days Non-Overlap)		87	
CONC	Off-Road Equipment		2.35E-02	
	—		0.00E+00	
	—		0.00E+00	
Days	Architectural Coating Year 2 (Overlaps with B.C. Year 2)		89	
CONC	Off-Road Equipment		0.00E+00	
	Work Days in Emissions Group	66	456	
	Average Annual Concentration in Emissions Group	5.09E-02	1.88E-02	

Source: ESA, 2020

Cancer Risk Calculations

	Parameter	Emissions Group 1 (0.25 years)	2 (2 years)	3 (67.75 years)	Total
DBR	Daily Breathing Rate (L/kg (body weight) per day)	581	581	581	
A	Inhalation absorption factor (default = 1).	1	1	1	
EF	Exposure Frequency (days/year)	350	350	350	
ED	Exposure Duration (years)	0.25	2	67.75	
EVF	Exposure Value Factor (unitless)	1	1	1	
AT	Averaged Exposure Time Period (days)	25550	25550	25550	
CONC	Toxic Air Contaminant Concentration ($\mu g/m^3$)	5.09E-02	1.88E-02	0.00E+00	
DOSE	*[= CONC × DBR × A × EF × ED × FAH / AT]* (mg/kg-d)	1.01E-01	2.99E-01	0.00E+00	
CPF	Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$				
	Diesel Particulate Matter	1.1	1.1	1.1	
RISK	Cancer Risk (in one million) *[= DOSE × CPF × ASF]*	1.11E-01	3.29E-01	0.00E+00	**4.40E-01**

Sources:

SCAQMD, Risk Assessment Procedures for Rules 1401 and 212, Appendix L, Version 7.0, 2012.

http://www.aqmd.gov/docs/default-source/planning/risk-assessment/risk-assessment-procedures-v-7.pdf?sfvrsn=4

http://www.aqmd.gov/docs/default-source/planning/risk-assessment/attachment-l.pdf?sfvrsn=4

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Maximum Individual Cancer Risk Calculations - Sensitive Receptors located South of the Project Site

Concentrations

	Construction Phase/Equipment	Emissions Group 1 (0.25 years)	2 (2 years)	3 (67.75 years)
Days	Demolition Year 1	15		
CONC	Off-Road Equipment	3.74E-02		
	On-Road HHDT Trucks	6.81E-04		
	Idling HHDT Trucks	4.49E-03		
Days	Site Preparation Year 1	8		
CONC	Off-Road Equipment	3.46E-02		
Days	Grading/Excavation Year 1	43	43	
CONC	Off-Road Equipment	5.89E-02	5.89E-02	
	On-Road HHDT Trucks	2.04E-03	2.04E-03	
	Idling HHDT Trucks	1.35E-02	1.35E-02	
Days	Building Construction-1 Year 1		152	
CONC	Off-Road Equipment		1.73E-02	
	On-Road MHDT/HHDT Trucks		4.58E-04	
	Idling MHDT/HHDT Trucks		3.90E-03	
Days	Building Construction-1 Year 2		129	
CONC	Off-Road Equipment		1.73E-02	
	On-Road MHDT/HHDT Trucks		3.75E-04	
	Idling MHDT/HHDT Trucks		3.28E-03	
Days	Building Construction-2 Year 2		89	
CONC	Off-Road Equipment		7.65E-03	
	On-Road MHDT/HHDT Trucks		3.75E-04	
	Idling MHDT/HHDT Trucks		3.28E-03	
Days	Paving Year 2 (Partial Overlap with B.C. Year 2; 43 Days Non-Overlap)		87	
CONC	Off-Road Equipment		2.28E-02	
	—		0.00E+00	
	—		0.00E+00	
Days	Architectural Coating Year 2 (Overlaps with B.C. Year 2)		89	
CONC	Off-Road Equipment		0.00E+00	
	Work Days in Emissions Group	66	456	
	Average Annual Concentration in Emissions Group	4.51E-02	1.67E-02	

Source: ESA, 2020

Cancer Risk Calculations

	Parameter	Emissions Group 1 (0.25 years)	2 (2 years)	3 (67.75 years)	Total
DBR	Daily Breathing Rate (L/kg (body weight) per day)	581	581	581	
A	Inhalation absorption factor (default = 1).	1	1	1	
EF	Exposure Frequency (days/year)	350	350	350	
ED	Exposure Duration (years)	0.25	2	67.75	
EVF	Exposure Value Factor (unitless)	1	1	1	
AT	Averaged Exposure Time Period (days)	25550	25550	25550	
CONC	Toxic Air Contaminant Concentration ($\mu g/m^3$)	4.51E-02	1.67E-02	0.00E+00	
DOSE	*[= CONC × DBR × A × EF × ED × FAH / AT]* (mg/kg-d)	8.97E-02	2.65E-01	0.00E+00	
CPF	Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$				
	Diesel Particulate Matter	1.1	1.1	1.1	
RISK	Cancer Risk (in one million) [= *DOSE × CPF × ASF]*	9.87E-02	2.92E-01	0.00E+00	**3.91E-01**

Sources:

SCAQMD, Risk Assessment Procedures for Rules 1401 and 212, Appendix L, Version 7.0, 2012.

http://www.aqmd.gov/docs/default-source/planning/risk-assessment/risk-assessment-procedures-v-7.pdf?sfvrsn=4

http://www.aqmd.gov/docs/default-source/planning/risk-assessment/attachment-l.pdf?sfvrsn=4

ESA, 2020

6220 West Yucca Street Mixed Use Project
Draft Environmental Impact Report
Construction Health Risk Assessment - OEHHA 2003 - Mitigated

Maximum Individual Cancer Risk Calculations - Sensitive Receptors located North of the Project Site

Concentrations

	Construction Phase/Equipment	Emissions Group 1 (0.25 years)	2 (2 years)	3 (67.75 years)
Days	Demolition Year 1	15		
CONC	Off-Road Equipment	4.49E-02		
	On-Road HHDT Trucks	1.17E-03		
	Idling HHDT Trucks	4.86E-03		
Days	Site Preparation Year 1	8		
CONC	Off-Road Equipment	4.15E-02		
Days	Grading/Excavation Year 1	43	43	
CONC	Off-Road Equipment	7.08E-02	7.08E-02	
	On-Road HHDT Trucks	3.52E-03	3.52E-03	
	Idling HHDT Trucks	1.46E-02	1.46E-02	
Days	Building Construction-1 Year 1		152	
CONC	Off-Road Equipment		2.07E-02	
	On-Road MHDT/HHDT Trucks		7.89E-04	
	Idling MHDT/HHDT Trucks		4.22E-03	
Days	Building Construction-1 Year 2		129	
CONC	Off-Road Equipment		2.07E-02	
	On-Road MHDT/HHDT Trucks		6.46E-04	
	Idling MHDT/HHDT Trucks		3.55E-03	
Days	Building Construction-2 Year 2		89	
CONC	Off-Road Equipment		9.20E-03	
	On-Road MHDT/HHDT Trucks		6.46E-04	
	Idling MHDT/HHDT Trucks		3.55E-03	
Days	Paving Year 2 (Partial Overlap with B.C. Year 2; 43 Days Non-Overlap)		87	
CONC	Off-Road Equipment		2.74E-02	
	—		0.00E+00	
	—		0.00E+00	
Days	Architectural Coating Year 2 (Overlaps with B.C. Year 2)		89	
CONC	Off-Road Equipment		0.00E+00	
	Work Days in Emissions Group	66	456	
	Average Annual Concentration in Emissions Group	5.39E-02	1.99E-02	

Source: ESA, 2020

Cancer Risk Calculations

	Parameter	Emissions Group 1 (0.25 years)	2 (2 years)	3 (67.75 years)	Total
DBR	Daily Breathing Rate (L/kg (body weight) per day)	581	581	581	
A	Inhalation absorption factor (default = 1).	1	1	1	
EF	Exposure Frequency (days/year)	350	350	350	
ED	Exposure Duration (years)	0.25	2	67.75	
EVF	Exposure Value Factor (unitless)	1	1	1	
AT	Averaged Exposure Time Period (days)	25550	25550	25550	
CONC	Toxic Air Contaminant Concentration ($\mu g/m^3$)	5.39E-02	1.99E-02	0.00E+00	
DOSE	*[= CONC × DBR × A × EF × ED × FAH / AT]* (mg/kg-d)	1.07E-01	3.17E-01	0.00E+00	
CPF	Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$				
	Diesel Particulate Matter	1.1	1.1	1.1	
RISK	Cancer Risk (in one million) *[= DOSE × CPF × ASF]*	1.18E-01	3.48E-01	0.00E+00	**4.66E-01**

Sources:

SCAQMD, Risk Assessment Procedures for Rules 1401 and 212, Appendix L, Version 7.0, 2012.

http://www.aqmd.gov/docs/default-source/planning/risk-assessment/risk-assessment-procedures-v-7.pdf?sfvrsn=4

http://www.aqmd.gov/docs/default-source/planning/risk-assessment/attachment-l.pdf?sfvrsn=4

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6220 West Yucca Street Mixed Use Project
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Maximum Individual Cancer Risk Calculations - Sensitive Receptors located West of the Project Site

Concentrations

	Construction Phase/Equipment	Emissions Group 1 (0.25 years)	2 (2 years)	3 (67.75 years)
Days	Demolition Year 1	15		
CONC	Off-Road Equipment	1.82E-02		
	On-Road HHDT Trucks	5.52E-04		
	Idling HHDT Trucks	3.22E-03		
Days	Site Preparation Year 1	8		
CONC	Off-Road Equipment	1.68E-02		
Days	Grading/Excavation Year 1	43	43	
CONC	Off-Road Equipment	2.87E-02	2.87E-02	
	On-Road HHDT Trucks	1.66E-03	1.66E-03	
	Idling HHDT Trucks	9.67E-03	9.67E-03	
Days	Building Construction-1 Year 1		152	
CONC	Off-Road Equipment		8.41E-03	
	On-Road MHDT/HHDT Trucks		3.72E-04	
	Idling MHDT/HHDT Trucks		2.79E-03	
Days	Building Construction-1 Year 2		129	
CONC	Off-Road Equipment		8.41E-03	
	On-Road MHDT/HHDT Trucks		3.04E-04	
	Idling MHDT/HHDT Trucks		2.35E-03	
Days	Building Construction-2 Year 2		89	
CONC	Off-Road Equipment		3.73E-03	
	On-Road MHDT/HHDT Trucks		3.04E-04	
	Idling MHDT/HHDT Trucks		2.35E-03	
Days	Paving Year 2 (Partial Overlap with B.C. Year 2; 43 Days Non-Overlap)		87	
CONC	Off-Road Equipment		1.11E-02	
	—		0.00E+00	
	—		0.00E+00	
Days	Architectural Coating Year 2 (Overlaps with B.C. Year 2)		89	
CONC	Off-Road Equipment		0.00E+00	
	Work Days in Emissions Group	66	456	
	Average Annual Concentration in Emissions Group	2.40E-02	8.83E-03	

Source: ESA, 2020

Cancer Risk Calculations

	Parameter	Emissions Group 1 (0.25 years)	2 (2 years)	3 (67.75 years)	Total
DBR	Daily Breathing Rate (L/kg (body weight) per day)	581	581	581	
A	Inhalation absorption factor (default = 1).	1	1	1	
EF	Exposure Frequency (days/year)	350	350	350	
ED	Exposure Duration (years)	0.25	2	67.75	
EVF	Exposure Value Factor (unitless)	1	1	1	
AT	Averaged Exposure Time Period (days)	25550	25550	25550	
CONC	Toxic Air Contaminant Concentration ($\mu g/m^3$)	2.40E-02	8.83E-03	0.00E+00	
DOSE	*[= CONC × DBR × A × EF × ED × FAH / AT]* (mg/kg-d)	4.77E-02	1.41E-01	0.00E+00	
CPF	Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$				
	Diesel Particulate Matter	1.1	1.1	1.1	
RISK	Cancer Risk (in one million) *[= DOSE × CPF × ASF]*	5.24E-02	1.55E-01	0.00E+00	**2.07E-01**

Sources:

SCAQMD, Risk Assessment Procedures for Rules 1401 and 212, Appendix L, Version 7.0, 2012.

http://www.aqmd.gov/docs/default-source/planning/risk-assessment/risk-assessment-procedures-v-7.pdf?sfvrsn=4

http://www.aqmd.gov/docs/default-source/planning/risk-assessment/attachment-l.pdf?sfvrsn=4

ESA, 2020

6220 West Yucca Street Mixed Use Project
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Construction Health Risk Assessment - OEHHA 2003 - Mitigated

Maximum Non-cancer Chronic Hazards / Toxicological Endpoints*

Receptor Group	Pollutant	CREL[1]	CONC	WFrac	$CONC_{WF}$	HI	ALIM	BN	CVS	DEV	ENDC	EYE	HEM	IMMUN	KIDN	NS	REPRO	RESP	SK	Threshold	Over?
MEI Sensitive - East	DPM	5.00E+00	9.35E-02	1.00E+00	9.35E-02	1.87E-02	-	-	-	-	-	-	-	-	-	-	-	1.87E-02	-	1.0	NO
MEI Sensitive - South	DPM	5.00E+00	8.67E-02	1.00E+00	8.67E-02	1.73E-02	-	-	-	-	-	-	-	-	-	-	-	1.73E-02	-	1.0	NO
MEI Sensitive - North	DPM	5.00E+00	1.04E-01	1.00E+00	1.04E-01	2.08E-02	-	-	-	-	-	-	-	-	-	-	-	2.08E-02	-	1.0	NO
MEI Sensitive - West	DPM	5.00E+00	4.40E-02	1.00E+00	4.40E-02	8.81E-03	-	-	-	-	-	-	-	-	-	-	-	8.81E-03	-	1.0	NO

Sources:

1. California Air Resources Board, "Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values" and "OEHHA/ARB Approved Chronic Reference Exposure Levels and Target Organs," http://www.arb.ca.gov/toxics/healthval/healthval.htm. Tables last updated: January 30, 2014. Downloaded 03/13/2014.

Where:

$CONC_{WF}$	Pollutant Concentration ($\mu g/m^3$) multiplied by the weight fraction
CREL	Chronic Reference Exposure Level
HI	Hazard Index
MEI	Maximally Exposed Individual
WFrac	Weight fraction of speciated component

* Key to Toxicological Endpoints

ALIM	Alimentary Tract	EYE	Eye	NS	Nervous System
BN	Bone	HEM	Hematologic System	REPRO	Reproductive System
CVS	Cardiovascular System	IMMUN	Immune System	RESP	Respiratory System
DEV	Developmental System	KIDN	Kidney	SK	Skin
ENDC	Endocrine System				

Exhibit D

SCAQMD 2003 AQMP Appendix V, Carbon Monoxide Attainment Demonstration (Select Pages)

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FINAL
2003 AQMP APPENDIX V

MODELING AND ATTAINMENT DEMONSTRATIONS

AUGUST 2003

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BARRY R. WALLERSTEIN, D.Env.

CONTRIBUTORS

Elaine Chang, DrPH
Deputy Executive Officer
Planning, Rule Development and Area Sources

Laki Tisopulos, Ph.D., P.E.
Assistant Deputy Executive Officer
Planning, Rule Development and Area Sources

Zorik Pirveysian
Planning & Rules Manager
Planning, Rule Development and Area Sources

Joseph Cassmassi
Mark Bassett
Julia Lester
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CHAPTER 4 Revision to the Federal Carbon Monoxide Attainment Demonstration Plan

CHAPTER 4

REVISION TO THE FEDERAL CARBON MONOXIDE ATTAINMENT DEMONSTRATION PLAN

Hot Spot Analysis

The hot-spot analysis was performed using CAL3QHC. CAL3QHC is a model developed to predict the level of CO or other inert pollutant concentration emitted from motor vehicles at roadway intersections. CAL3QHC inputs include roadway geometry, receptor locations, meteorological conditions and vehicular emissions rate. A general description of the selection of the hot spot intersection, model input assumptions, and model application was presented in the 1992 CO Plan and is not repeated here.

The CAL3QHC model was applied to the four intersections listed in Table 4-7 to estimate the CO impacts from motor vehicles traveling at roadway intersections. CO concentrations were estimated for both the 1997 base year and for the year 2002 based on projected traffic volume and emission factors. The October 31-November 1, 1997 episode specific meteorological conditions for the grid cell hosting the intersection was used for the simulation. Tables 4-8, 4-9, and 4-10 show the model predicted and calculated CO concentration at the selected intersection in the years 1997 and 2002.

TABLE 4-7

Selected Intersections for the CAL3QHC
Hot Spot Modeling Analysis

Intersection	Receptor	Description
Long Beach Blvd. /Imperial Highway	Lynwood Air Monitoring Station	The Lynwood air monitoring stations consistently records the highest 8-hour CO concentrations in the Basin each year
Wilshire Blvd./ Veteran Ave.	No Air Monitoring	The most congested intersection in Los Angeles county. The average daily traffic volume is about 100,000 vehicles/day.
Highland Ave./ Sunset Blvd.	No Air Monitoring Station	One of the most congested intersections in the city of Los Angeles. The intersection study has been conducted and traffic data is available.
Century Blvd./ La Cienega Blvd.	No Air Monitoring Station	One of the most congested intersections in the city of Los Angeles. The intersection study has been conducted and traffic data is available.

TABLE 4 -8

Emissions Predicted by EMFAC2002 in Year 1997 and 2002

	Wilshire - Veteran		Sunset - Highland		La Cienega - Century		Long Beach - Imperial	
	AM	PM	AM	PM	AM	PM	AM	PM
a) EMFAC2002 Emission Variables (1997)								
Running Exhaust Emission Factor (g/mile)	11.57	11.96	13.31	12.72	11.82	11.66	11.92	11.93
Idling Emission Factor (g/min)	2.13	2.18	2.43	2.32	2.19	2.15	2.22.	2.18
b) EMFC2002 Emission Variables (2002)								
Running Exhaust Emission Factor (g/mile)	7.20	7.21	7.22	7.98	7.31	7.24	7.35	7.48
Idling Emission Factor (g/min)	1.24	1.24	1.25	1.30	1.27	1.25	1.28	1.28

TABLE 4-9

1997 1-Hour Average Carbon Monoxide Concentrations
Calculated from the CAL3QHC Model

	Morning*	Afternoon+	Peak++
Wilshire - Veteran	7.7	5.7	--
Sunset - Highland	6.9	7.3	--
La Cienega - Century	6.4	5.2	--
Long Beach - Imperial	5.1	5.2	2.2

* Morning : 7-8 a.m. for La Cienega - Century, 11-12 a.m. for Sunset - Highland, 8-9 for Wilshire-Veteran, and 7-8 a.m. for Long Beach - Imperial

\+ Afternoon : 3-4 p.m. for Sunset - Highland, 3-4 p.m. for Wilshire - Veteran, 4-5 p.m. for Long Beach - Imperial, and 6-7 p.m. for La Cienega - Century

++ Peak : 11-12 p.m. (concentration at the hour of the observed peak). Peak is only provided for the Long Beach/Imperial intersection since it is intersection associated with the regional peak at Lynwood.

TABLE 4-10

Year 2002 1-Hour Average Carbon Monoxide Concentrations
Calculated from the CAL3QHC Model

	Morning*	Afternoon+	Peak++
Wilshire-Veteran	4.6	3.5	--
Sunset-Highland	4.0	4.5	--
La Cienega-Century	3.7	3.1	--
Long Beach-Imperial	3.0	3.1	1.2

* Morning : 7-8 a.m. for, La Cienega - Century, 8-9 a.m. for Wilshire - Veteran, 7-8 a.m. for Long Beach - Imperial, and 8-9 a.m. for Sunset - Highland

\+ Afternoon : 3-4 p.m. for Sunset - Highland, 5-6 p.m. for Wilshire - Veteran, 4-5 p.m. and Long Beach - Imperial, and. 6-7 p.m. for and La Cienega - Century

++ Peak : 11-12 p.m. (concentration at the hour of the observed peak)). Peak is only provided for the Long Beach/Imperial intersection since it is intersection associated with the regional peak at Lynwood.

CARBON MONOXIDE CONTROL STRATEGY

Mobile sources, which are regulated primarily by ARB or U.S. EPA, produce the largest amount of carbon monoxide emissions in the Basin. The on-road motor vehicle control strategy is primarily based on adopted regulations, such as the 1990 ARB Low-Emission Vehicles and Clean Fuels (LEV/Clean Fuels) regulations, Phase 2 Reformulated Gasoline Program, oxygenated fuel regulation, and enhancements to the Inspection and Maintenance (I/M) or Smog Check program. The emission reduction resulting from these already adopted regulations are sufficient to demonstrate attainment in the year 2002, as discussed in a later section.

Contingency Measures

Section 187(a)(3) of the 1990 CAAA requires that adopted and enforceable contingency measures be included in the attainment plan submission. A deviation from the forecasted VMT of more than a given percentage will trigger implementation of contingency measures to offset either excess VMT or carbon monoxide emissions due to the additional VMT. According to the EPA General Preamble [Sect. 532(c)(1)], this percentage is 5 percent in 1994, 4 percent in 1995, and 3 percent for 1996 and subsequent years. The cumulative VMT growth cannot be greater than or equal to 5 percent above the VMT forecast used as the basis of the attainment demonstration.