

Appendix FEIR-7

Health Risk Assessment

Eystone Environmental
Health Risk Assessment,
3rd and Fairfax Project
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HEALTH RISK ASSESSMENT

3rd and Fairfax Project

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1.0 Executive Summary

1.1 Findings

This report provides an analysis of potential health risk impacts related to the proposed construction and operation of the 3rd and Fairfax Project (Project) in the City of Los Angeles, California. The analysis identified the baseline condition around the Project. The analysis also evaluated the Project's incremental change in health risk concentration exposure from diesel exhaust/diesel particulate matter (DPM) emitted by heavy-duty construction equipment during construction and heavy duty delivery trucks during operation of the Project. The findings of the analysis are as follows:

- For carcinogenic exposures, the increase in risk is calculated to be 4.1 in one million, which is less than the applicable threshold of 10 in one million for sensitive receptors in close proximity to the Project Site, resulting in a less than significant impact. Residential receptors located farther away from the Project Site would result in an incremental cancer risk increase of 1.2 in one million.
- For chronic non-carcinogenic exposures, the increase in the respiratory hazard index was estimated to be less than the applicable threshold of one for sensitive receptors in close proximity to the Project Site, resulting in a less than significant impact.

2.0 Introduction

The Project is a mixed-use development that contains residential dwelling units and ground-floor retail uses. To be clear, this is not the type of project that the regulatory agencies, or the applicable regulatory laws, at the time the Draft Environmental Impact Report (Draft EIR) was prepared, require to produce a Health Risk Assessment (HRA) for adequate disclosure of potential air quality impacts pursuant to the California Environmental Quality Act (CEQA).

The California Air Pollution Control Officers Association (CAPCOA) Guidance Document for Health Risk Assessments for Proposed Land Use Projects (2009) (CAPCOA HRA Guidance) provides lead agencies with guidance regarding when and how an HRA should be prepared. It bases the risk assessment methodology on the procedures developed by the California Office of Environmental Health Hazard Assessment (OEHHA) to meet the mandates of the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588). The CAPCOA HRA Guidance states that "[t]here are basically two types of land use projects that have the potential to cause long-term public health risk impacts: Type A – land use projects with toxic emissions that impact receptors; and Type B land use projects that will place receptors in the vicinity of existing toxic sources. Type A project examples are combustion related power plants, gasoline dispensing facilities, asphalt batch plants, warehouse distribution centers, quarry operations, and other stationary sources that emit toxic substances. Type B project examples are stationary sources, high traffic roads, freeways, rail yards, and ports." Note that the Project does not qualify as either a Type A or Type B project. The Project does not contemplate any industrial uses, and is not being sited in the vicinity of existing toxic sources, including stationary sources, freeways, rail yards, or ports. The roads adjacent to the Project Site are not high traffic roads.¹ Therefore, per the CAPCOA HRA Guidance in effect when the Draft EIR for the Project was prepared, the lead agency did not include an HRA in the Draft EIR. Accordingly, this HRA was done voluntarily for informational purposes only to supplement the administrative record, and further demonstrates that even if an HRA was necessary (which it was not) the Project still would not have a significant air quality impact.

¹ *California Air Resources Board (CARB) recommends avoiding siting new sensitive land uses such as residences, schools, daycare centers, playgrounds, or medical facilities within 500 feet of a freeway, urban roads with traffic volumes exceeding 100,000 vehicles per day, or rural roads with volumes greater than 50,000 vehicles per day. CARB, Air Quality and Land Use Handbook: a Community Health Perspective, April 2005, p. 4, <https://ww3.arb.ca.gov/ch/handbook.pdf>.*

The OEHHA adopted the Air Toxics Hot Spots Program Guidance Manual for the Preparation of Risk Assessments (2003 Guidance Manual) in October of 2003. The Guidance Manual was developed by OEHHA, in conjunction with the California Air Resources Board (CARB), for use in implementing the Air Toxics “Hot Spots” Program (Health and Safety Code Section 44360 et. seq.). The Air Toxics “Hot Spots” Program requires stationary sources to report the types and quantities of certain substances routinely released into the air. The goals of the Air Toxics “Hot Spots” Program are to collect emission data, to identify facilities having localized impacts, to ascertain health risks, to notify nearby residents of significant risks, and to reduce those significant risks to acceptable levels.

OEHHA adopted a new version of the Air Toxics Hot Spots Program Guidance Manual for the Preparation of Risk Assessments (2015 Guidance Manual) in March of 2015.² CARB acknowledges that the Guidance Manual does not include guidance for CEQA and that it would be “handled by individual [Air Pollution Control] Districts.”³ The intent in developing the 2015 Guidance Manual was to provide HRA procedures for use in the Air Toxics Hot Spots Program or for the permitting of new or modified stationary sources. As noted above, the Project is not a new or modified stationary source that requires air quality permits to construct or operate. Air districts are to determine which facilities will prepare an HRA based on a prioritization process. The 2015 Guidance Manual provides recommendations related to cancer risk evaluation of short-term projects. As discussed in Section 8.2.10 of the 2015 Guidance Manual, “[t]he local air pollution control districts sometimes use the risk assessment guidelines for the Hot Spots program in permitting decisions for short-term projects such as construction or waste site remediation.” Thus, to be conservative, this HRA was prepared in part to analyze potential construction impacts, even though short-term projects that would require a permitting decision by South Coast Air Quality Management District (SCAQMD) typically would be limited to site remediation (e.g., stationary soil vapor extractors) and would not be applicable to the Project. The 2015 Guidance Manual does not provide specific recommendations for evaluation of short-term use of mobile sources (e.g., heavy-duty diesel construction equipment).

² Office of Environmental Health Hazard Assessment, *Air Toxicology and Epidemiology, Adoption of Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. March 6, 2015, www.oehha.ca.gov/air/hot_spots/hotspots2015.html.

³ CARB, *Risk Management Guidance for Stationary Sources of Air Toxics*, July 23, 2015, p. 19, www.arb.ca.gov/toxics/rma/rmgssat.pdf.

OEHHA's 2015 Guidance Manual provides Age Sensitivity Factors (ASFs) to account for potential increased sensitivity of early-in-life exposure to carcinogens. A review of relevant guidance was conducted to determine applicability of the use of early life exposure adjustments to identified carcinogens. For risk assessments conducted under the auspices of The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, Connelly, Statutes of 1987; Health and Safety Code Section 44300 et seq.) a weighting factor is applied to all carcinogens regardless of purported mechanism of action. The use of these factors would not be applicable to this HRA as neither the Lead Agency nor SCAQMD have developed recommendations on whether these factors should be used for CEQA analyses of potential DPM construction impacts. For this assessment, the HRA relied upon United States Environmental Protection Agency (USEPA) guidance relating to the use of early life exposure adjustment factors (Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens, EPA/630/R-003F) whereby adjustment factors are only considered when carcinogens act "through the mutagenic mode of action." The USEPA has identified 19 compounds that elicit a mutagenic mode of action for carcinogenesis. For DPM, polycyclic aromatic hydrocarbons (PAHs) and their derivatives, which are known to exhibit a mutagenic mode of action, comprise less than one percent of the exhaust particulate mass. To date, the USEPA reports that whole diesel engine exhaust has not been shown to elicit a mutagenic mode of action. Therefore, early life exposure adjustments were not considered in this HRA.

In addition, the *L.A. City CEQA Thresholds Guide* (Thresholds Guide) states that "impacts from toxic air contaminants can occur during either the construction or operational phases of a project. During certain construction activities, potential releases of toxic air contaminants could occur during site remediation activities or during building demolition. Toxic air contaminants may also be released during industrial or manufacturing processes, or other activities that involve the use, storage, processing, or disposal of toxic materials."⁴ Importantly, note that, the Thresholds Guide does not specifically recommend an HRA for short-term DPM emissions from construction activities. The Thresholds Guide also sets forth the following factors for consideration on a case-by-case basis in making a determination of significance with regard to toxic air contaminants: the regulatory framework for the toxic material(s) and process(es) involved; the proximity of the toxic air contaminants to sensitive receptors; the quantity, volume, and toxicity of the contaminants expected to be emitted; the likelihood and potential level of exposure; and the degree to which project design will reduce the risk of exposure. Based on this information, the methodology utilized in the Draft EIR remains consistent with City of Los Angeles guidance, which indicates that preparation of an HRA was not required for the Project.

⁴ *City of Los Angeles, CEQA Thresholds Guide, 2006, p. B.3-2.*

Also, CARB has published and adopted the *Air Quality and Land Use Handbook: A Community Health Perspective*, which provides recommendations regarding the siting of new sensitive land uses near potential sources of air toxic emissions (e.g., freeways, distribution centers, rail yards, ports, refineries, chrome plating facilities, dry cleaners, and gasoline dispensing facilities).⁵ SCAQMD adopted similar recommendations in its *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*.⁶ Together, the CARB and SCAQMD guidelines recommend siting distances for both the development of sensitive land uses in proximity to Toxic Air Contaminates (TAC) sources and the addition of new TAC sources in proximity to existing sensitive land uses. When considering potential air quality impacts under CEQA, consideration is given to the location of sensitive receptors within close proximity of land uses that emit TACs. Applied here, the Project does not site new sensitive land uses near existing sources of air toxic emissions.

The primary sources of potential air toxics associated with Project operations include DPM from delivery trucks (e.g., truck traffic on local streets and idling on adjacent streets). However, these activities, and the land uses associated with the Project, are not considered land uses that generate substantial TAC emissions based on review of the air toxic sources listed in SCAQMD's and CARB's guidelines. It should be noted that the SCAQMD recommends that HRAs be conducted for substantial individual sources of DPM (e.g., truck stops and warehouse distribution facilities that generate more than 100 trucks per day or more than 40 trucks with operating transport refrigeration units) and has provided guidance for analyzing mobile source diesel emissions.⁷ Based on this guidance, the Project is not considered these types of land uses and is not considered to be a substantial source of DPM warranting a refined HRA since daily truck trips to the Project Site would not exceed 100 trucks per day or more than 40 trucks with operating transport refrigeration units. In addition, the CARB-mandated ATCM limits diesel-fueled commercial vehicles (delivery trucks) to idle for no more than 5 minutes at any given time, which would further limit diesel particulate emissions.

Although a construction and operational HRA is not required for the reasons discussed above, for informational purposes only, this HRA has been prepared to provide a good faith and reasoned response to public comments and to provide the City with additional substantial evidence that demonstrates that the Project would not create a significant health risk impact..

⁵ CARB, *Air Quality and Land Use Handbook, a Community Health Perspective*, April 2005.

⁶ SCAQMD, *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*, May 6, 2005.

⁷ SCAQMD, *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*, 2003.

3.0 Health Risk Assessment

3.1 Project Description

The Project is a new mixed-use development proposed on an approximately 7.51-acre site (Project Site) that is generally bounded by W.3rd Street to the north, S. Ogden Drive to the east, a commercial service alley and then the Hancock Park Elementary School to the south, and S. Fairfax Avenue to the west. The development activity would occur on the eastern portion of the Project Site in an approximately 3.15 acres area.

The Project proposes construction of a mid-rise, eight-story mixed-use structure with two levels of subterranean parking, for a maximum height of 100 feet. The residential component of the Project would include up to 331 multi-family dwelling units and 83,994 square feet of newly developed commercial space for a total new floor area of 426,994 square feet. The western portion of the Project Site would remain and is not proposed to be demolished, altered, or developed as part of the Project.

Certain activities would emit diesel particulate matter (DPM) from heavy-duty trucks and heavy-duty equipment used during construction and to a lesser extent heavy-duty delivery trucks accessing the Project Site during operation of the Project. CARB and OEHHA have classified DPM as a carcinogen. Existing nearby sensitive receptors consist of school uses (Hancock Park Elementary School) located south of the Project Site; and residential uses located south and southeast of the Project Site, across Colgate Avenue and Ogden Drive.

3.2 The Assessment Process

The risk assessment process provided in OEHHA's 2003 Guidance Manual consists of four basic steps: (1) hazard identification; (2) exposure assessment; (3) dose-response assessment; and (4) risk characterization.⁸ In the first step, hazard identification involves determining the potential health effect which may be associated with emitted pollutants. The purpose is to identify qualitatively whether a pollutant is a potential human carcinogen or is associated with other types of adverse health effects. Depending on the

⁸ Office of Environmental Health Hazard Assessment, *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, August 2003, Page 1-6.

chemical, these health effects may include short-term ailments or chronic diseases. The dose-response assessment is designed to characterize the relationship between the amount or dose of a chemical and its toxicological effect on the human body. Responses to toxic chemicals will vary depending on the amount and length of exposure. For example, short-term exposure to low concentrations of chemicals may produce no noticeable effect, but continued exposure to the same levels of chemicals over a long period of time may eventually cause harm. The purpose of the exposure assessment is to estimate the extent of exposure to each substance for which risk will be evaluated. This involves emission quantification, modeling of environmental transport, identification of chemicals of concern, identification of exposure routes, identification of exposed populations, and estimation of long-term exposure levels. Risk characterization is an integration of the health effects and public exposure information developed for emitted pollutants to provide a quantitative probability of adverse health effects.

3.3 Source Identification and Characterization

3.3.1 Source Identification

As indicated above, the primary source of potential air toxics associated with the Project is DPM from heavy-duty trucks and heavy-duty construction equipment used during construction and to a lesser extent heavy-duty delivery trucks accessing the Project Site during operation of the Project. The SCAQMD recommends that an HRA be conducted for substantial sources of long-term DPM operational sources (e.g., truck stops and warehouse distribution facilities) and has provided guidance for analyzing mobile source diesel emissions.⁹ While Project construction would not represent a long-term source of DPM emissions¹⁰, the SCAQMD Guidance was used for purposes of modeling parameters and assumptions.

3.3.2 Source Characterization

Construction

Project construction would commence with demolition of the existing uses, followed by grading and excavation for the subterranean parking garages. Building foundations would then be placed, followed by building construction, paving/concrete installation, and landscape installation. Project construction is anticipated to occur over approximately 32

⁹ SCAQMD, *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Emissions*, August 2003.

¹⁰ *Project construction is short term—32 months. Moreover, the Project is residential, commercial, and open spaces uses, none of which are associated with heavy-duty truck use or significant DPM emissions.*

months. It is estimated that approximately 110,000 cubic yards (cy) of soil would be hauled from the Project Site during the grading and excavation phase.

Total DPM emissions over the duration of Project construction were calculated using the SCAQMD recommended California Emissions Estimator Model (CalEEMod) and consistent with the methodology for calculating criteria pollutant emissions provided in Section IV.A, Air Quality, of the Draft EIR. The calculations of the emissions generated during Project construction activities reflect the types and quantities of construction equipment and haul trucks that would be used to complete the proposed construction activities. As the assumptions used in the air quality analysis were developed to characterize a worst-case peak day of construction by phase, equipment usage assumptions were modified to reflect average daily use.

CalEEMod calculates annual emissions based on worst-case conditions occurring on a daily basis. This scenario would not represent real world conditions as construction activities and equipment would not be expected to operate at 100 percent on an average daily basis. Construction surveys prepared for CARB have documented that on a typical construction site, daily average equipment hours range from 2 to 7.5 hours depending on the type of equipment.¹¹ Therefore, an adjustment was taken into account which assumes that annual average emissions would conservatively represent 80 percent of a worst-case day.

DPM emissions were calculated using the 3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation Annual CalEEMod output file provided in Appendix E, Greenhouse Gas Emissions, of the Draft EIR. It was assumed that all on-site (e.g., off-road equipment) equipment would be diesel and, therefore, on-site exhaust PM₁₀ emissions provided in the Draft EIR CalEEMod output file were included in this HRA as DPM. The Draft EIR CalEEMod output file is provided in Appendix A of this HRA.

Operation

As discussed above, the Project would include up to 331 multi-family dwelling units (343,000 square feet) and 83,994 square feet of newly developed commercial space (63,082 square feet of supermarket use, 13,412 square feet of retail, and 7,500 square feet of restaurant) for a total new floor area of 426,994 square feet. A conservative estimate of the number of daily truck trips is provided below based on the National Cooperative

¹¹ California Air Resources Board, *Characterization of the Off-Road Equipment Population*, December 2008.

Highway Research Program (NCHRP) Truck Trip Generation Data and Transportation Northwest Truck Trip Generation by Grocery Stores.^{12,13}

- Table D-2c of the NCHRP data (Trip Generation Summary—Daily Commercial Vehicle Trips per 1,000 sf of Building Space for Retail (includes restaurants)) provides an average of 0.324 truck trips per 1,000 sf or approximately 7.1 truck trips per day for the Project's retail/restaurant uses. This assumes that all trucks would be diesel even though many retail/restaurant truck deliveries are from smaller gasoline or alternative energy source trucks (e.g., UPS or FedEx). It was assumed that one of the trucks per day would be equipped with transportation refrigeration units (TRUs) related to restaurant use.
- Table D-2e of the NCHRP data (Trip Generation Summary—Daily Commercial Vehicle Trips per 1,000 sf of Building Space for Other Land Uses (includes housing)) provides an average of 0.011 truck trips per 1,000 sf or approximately 3.8 truck trips per day for the Project's residential uses. It is conservatively assumed that all of these delivery trucks would be heavy-duty diesel trucks even though many residential truck deliveries are from smaller gasoline or alternative energy source trucks (e.g., UPS or FedEx).
- Supermarket: Findings from the Grocery Store Study show that grocery stores in the study generated an average of 18 trucks trip per day on a typical peak weekday. It was assumed that five of the trucks per day would be equipped with transportation refrigeration units (TRUs).

Accordingly, the Project is conservatively estimated to generate approximately 29 trucks per day during operation.

Emissions from transportation refrigeration units (TRUs) were estimated using the CARB Draft 2019 Emissions Inventory for Transportation Refrigeration Units.¹⁴ Emissions from delivery trucks travelling to and from the Project Site as well as idling were estimated using the CARB EMFAC2021 model. Trucks travelling to/from the loading docks generate emissions through truck engine idling, TRU operation and travelling.

Importantly, note that, with respect to truck emissions associated with the operation of projects, the SCAQMD recommends that HRAs be conducted for substantial sources of

¹² National Cooperative Highway Research Program (NCHRP) *Synthesis 298 Truck Trip Generation Data*, 2001, http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_syn_298.pdf.

¹³ *Transportation Northwest, Truck Trip Generation by Grocery Stores, Final Report TNW2010-04, August 2010.*

¹⁴ *California Air Resources Board. Draft 2019 Update to Emissions Inventory for Transportation Refrigeration Units. October 2019.*

DPM for developments that include truck stops and warehouse distribution facilities that generate more than 100 trucks per day or more than 40 trucks with operating TRUs. In other words, SCAQMD has identified an amount of truck trips per day that could warrant conducting an HRA to analyze emissions and health risks. Projects with truck trips below the aforementioned amounts should not be considered a substantial source of DPM and HRAs are neither recommended nor required by the applicable regulatory documents.

Specifically, the Project is not considered to be a substantial source of operational DPM warranting an HRA because there are only 29 daily truck trips to the Project Site, which is far below the either more-than-100-trucks-per-day or more-than-40-TRU-trucks-per-day that indicate when a project could be considered a substantial DPM source. Nonetheless, operational health risks from use of operational delivery trucks for the Project was evaluated for informational purposes and included in this HRA.

Note also that, based on SCAQMD guidance, there is no quantitative analysis required for future cancer risk within the vicinity of the Project because it is consistent with the recommendations regarding the siting of new sensitive land uses near potential sources of TAC emissions provided in the SCAQMD Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning.

3.3.3 Baseline and Identification of Chemicals of Concern

The Draft EIR identified the baseline of conditions around the Project Site and the ambient levels of TACs. The SCAQMD released the fourth round of its Basin-wide Multiple Air Toxics Exposure Study (MATES IV – Final Report) in May 2015.¹⁸ MATES IV estimated the cancer risk from TAC emissions throughout the Basin by conducting a monitoring program, an updated emissions inventory of TACs, and a modeling effort to characterize health risks in the air basin. As part of MATES IV, the SCAQMD prepared an interactive map that shows estimates of cancer risks in the Basin from ambient levels of TACs based on the modeling effort to provide insight into relative risks. The map reports estimated cancer risks for discrete two-kilometer-by-two-kilometer grid cells. The cancer risk estimates reported there should not be interpreted as actual rates of disease in the exposed population, but rather as estimates of potential risk, based on a number of conservative assumptions. In general, MATES IV indicates that the highest cancer risks from TACs are found near shipping ports, goods movement sources, and near freeways and other transportation corridors. The central portion of Los Angeles falls in an estimated range of 1,001 to 1,200 risks per one million. The Project Site falls in an estimated range of 1,001-1,200 risks per one million. A figure in Appendix E to this HRA shows the MATES IV Total Cancer Risk around Project Site. Compared to previous studies of air toxics in the

Basin, the MATES IV study found decreasing air toxics exposure from the analysis done in the MATES III time period.

This HRA identifies the baseline condition and also identifies the actual additional risks due to certain emissions associated with the Project. Note that, as discussed above, the CAPCOA regulatory guidance adopted at the time the Draft EIR was prepared indicates that HRAs should assess Type A (toxic emissions) and Type B (placing receptors near existing toxic sources) projects with within the CEQA context. This HRA presents the incremental health risks analysis even though the Project does not squarely qualify as either a Type A or Type B project. Accordingly, this voluntary HRA analysis is informational, and further informs the public and decision makers, but is not required pursuant to the laws in effect when the Draft EIR was prepared. Nonetheless, this HRA quantitatively evaluated DPM as a chemical of concern for potential health effects in two categories, carcinogenic and non-carcinogenic.

3.4 Exposure Quantification

Consistent with SCAQMD's Localized Significance Threshold Methodology (LST Guidelines), this HRA used USEPA's Regulatory Model AERMOD to assess the downwind extent of DPM concentrations from proposed construction and operational activities.¹⁵ AERMOD accounts for a variety of refined, site-specific conditions that facilitate an accurate assessment of Project impacts. AERMOD's air dispersion algorithms are based upon a planetary boundary layer turbulence structure and scaling concepts, including the treatment of surface and elevated sources in simple and complex terrain.

Exhaust emissions from construction and operational equipment were treated as a set of side-by-side elevated volume sources. The release height was assumed to be 12 feet. This represents the mid-range of the expected plume rise from frequently used construction equipment and operational heavy-duty trucks during daytime atmospheric conditions. All construction exhaust emissions were assumed to take place over a 32-month (2.7 year) duration on weekdays between 7 A.M. to 3 P.M. (8-hour period). Operational exhaust emissions were assumed to take place 6-days per week between 7 A.M. to 3 P.M. (8-hour period) and included 15 minutes of idle time to account for ingress, egress, and travel on-site.¹⁶

¹⁵ SCAQMD, Final-Localized Significance Threshold Methodology, 2008

¹⁶ SCAQMD, *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*, 2003, www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mobile-source-toxics-analysis.

Air dispersion models require additional input parameters including local meteorology and receptors. Due to the sensitivity to individual meteorological parameters such as wind speed and direction, the USEPA recommends that meteorological data used as input into dispersion models be selected on the basis of relative spatial and temporal conditions that exist in the area of concern. In response to this recommendation, meteorological data from the SCAQMD Downtown Los Angeles monitoring station (Source Receptor Area 1) were used to represent local weather conditions and prevailing winds.

Cartesian receptor grids were used to represent adjacent and nearby sensitive land uses. The Cartesian receptor grids were placed at each sensitive use with a built in 10 meter spacing for the adjacent school and nearby residential uses. All receptors were placed at ground level, which is recommended by SCAQMD for AERMOD modeling. Elevations for both sources and receptors were provided by the U.S. Geological Survey (USGS) and included using the AERMOD terrain processor AERMAP.

DPM modeled concentrations were used to calculate cancer risk and chronic hazard index at each relevant receptor. A graphical representation of the source-receptor grid network is presented in Appendix C.

3.5 Risk Characterization

3.5.1 Carcinogenic Chemical Risk

Health risks associated with exposure to carcinogenic compounds at sensitive land uses in close proximity to the Project can be defined in terms of the probability of developing cancer as a result of exposure to a chemical at a given concentration. Under a deterministic approach (i.e., point estimate methodology), the cancer risk probability is determined by multiplying the chemical's annual concentration by its unit risk factor (URF). The URF is a measure of the carcinogenic potential of a chemical when a dose is received through the inhalation pathway. It represents an upper bound estimate of the probability of contracting cancer as a result of continuous exposure to an ambient concentration of one microgram per cubic meter ($\mu\text{g}/\text{m}^3$) over a 70-year lifetime. The SCAQMD recommends a threshold of ten in one million cancer risk for evaluating carcinogenic impacts at sensitive receptors.¹⁷

¹⁷ *South Coast Air Quality Management District Air Quality Significance Thresholds.* www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2.

The equation used to calculate the potential excess cancer risk is:

$$\text{Risk}_i = C_i \times \text{CP}_i \times \text{DBR} \times \text{EVF}$$

Where:

Risk_i = Lifetime Excess Cancer Risk from exposure to chemical_i

C_i = Representative Air Concentration for chemical_i ($\mu\text{g}/\text{m}^3$)

CP_i = Cancer Potency_i ($\text{mg}/\text{kg}\text{-day}$)⁻¹

DBR = Daily Breathing Rate (L/kg body weight-day)

EVF = Exposure Value Factor (unitless)

An estimate of an individual's incremental excess cancer risk from exposure to Project construction and operational DPM emissions is calculated by summing the chemical-specific excess cancer risks. In addition, cancer risk is evaluated based on the duration on which a sensitive receptor is exposed to DPM (exposure duration). Based on OEHHA guidelines, it is recommended that cancer risk analyses assume an exposure duration of 70-years for residential receptors, 30-years for worker receptors and 9-years for student receptors.¹⁸ The exposure duration takes into account the construction duration of 32 months during construction, and operational emissions occurring each year.

3.5.2 Non-Carcinogenic Chemical Risk

The potential for chronic non-carcinogenic health effects is evaluated by calculating the total hazard index (HI) for the Project construction and operational DPM emissions. This HI represents the sum of the hazard quotients (HQs) developed for each individual project-related chemical, where a HQ is the ratio of the representative air concentration of the chemical to the chemical specific non-cancer Reference Exposure Level (REL). The non-cancer RELs represent the daily average exposure concentration at (or below) which no adverse health effects are anticipated.

The equations used to calculate the chemical-specific HQs and HIs are:

$$\text{HQ}_i = C_i/\text{REL}_i$$

$$\text{HI} = \sum \text{HQ}_i$$

Where:

¹⁸ *Air Toxics Hot Spots Program Risk Assessment Guidelines. Office of Environmental Health and Hazard Assessment. August 2003*

HQ_i = Hazard Quotient for chemical_i
C_i = Average Daily Air Concentration for chemical_i (µg/m³)
REL_i = Noncancer Reference Exposure Level for chemical_i (µg/m³)
HI = Hazard Index

The SCAQMD recommends that the non-carcinogenic hazards of toxic air contaminants should not exceed a hazard index of 1.0 for either chronic or acute effects.¹⁹ Acute effects are due to short-term exposure, while chronic effects are due to long-term exposure to a substance. For chronic and acute risks, the hazard index is calculated as the summation of the hazard quotients for all chemicals to which an individual would be exposed. The acute hazard index was not quantified since an inhalation REL has not been determined by the OEHHA for DPM at the time of preparation of this HRA or the Draft EIR.

3.6 Conclusions

The results from the health risk calculations provide an estimate of the potential risks and hazards to individuals through inhalation of Project construction DPM emissions over a 32-month duration. Consistent with OEHHA guidelines, health risk impacts from Project operational DPM emissions were assessed over a 70-year exposure duration for residential receptors, a 9-year exposure duration for student receptors, and 30-year exposure duration for school worker (teacher) receptors. The estimated risks and hazards include: lifetime excess cancer risk estimates, and cumulative chronic HI estimates for the receptor locations of concern.

As shown in Appendix B and in Table 1 on page 15, the results of the HRA yields a maximum off-site individual cancer risk of 4.1 in a million for employees at the school receptors located south of the Project site. Students at the school may experience a 4.0 in one million cancer risk resulting from exposure to Project construction emissions. Residential uses farther away from the Project site would experience a 1.2 in one million cancer risk. The maximum chronic risk of 0.065 occurs within this same school receptor area. As the Project would not emit carcinogenic or toxic air contaminants that result in impacts which exceed the maximum individual cancer risk of ten in one million or the chronic index of 1.0, Project-related toxic emission impacts would be less than significant.

¹⁹ South Coast Air Quality Management District Air Quality Significance Thresholds. www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2.

Table 1
Health Risk Assessment

Risk	Significance Threshold	Calculated Risk	Significant Impact
Cancer Risk (Student)	10 in 1 Million	4.0E-06 which denotes excess cases of cancer of 4 in one million	No
Cancer Risk (School Worker)	10 in 1 Million	4.1E-06 which denotes excess cases of cancer of 4 in one million	No
Cancer Risk (Resident)	10 in 1 Million	1.2E-06 which denotes excess cases of cancer of 1 in one million	No
Non-Carcinogenic Risk (Maximum)	Chronic Index (HI) of 1.0	6.5E-02 which denotes an HI of 0.065	No

4.0 Uncertainty Assessment

Evaluating carcinogenic pollutant concentrations based on OEHHA methodology and SCAQMD Guidance has an implied uncertainty. These methodologies were developed to provide a conservative health risk estimate. The conservative nature of this methodology relies on a number of inputs designed to prevent an underestimation of risk. The following discusses the conservative nature of the risk assessment analysis assumptions utilized in this analysis.

The cancer risk from DPM occurs mainly through inhalation. Output from the dispersion analysis was used to estimate the DPM concentrations. The cancer risk estimate is then calculated based on those estimated DPM concentrations using the risk methodology promulgated by OEHHA. The risk assessment guidelines established by SCAQMD and included in the analysis are designed to produce conservative (high) estimates of the risk posed by DPM, due to the following factors:

- As a conservative measure, the SCAQMD does not recognize indoor adjustments for residential and school uses. However, studies have shown that the typical person spends approximately 87 percent of their time indoors, 5 percent of their time outdoors, and 7 percent of their time in vehicles. Elementary school students were shown to spend approximately 20 percent of the school day outdoors with the remaining 80 percent indoors.²⁰ A DPM exposure assessment showed that an average indoor concentration was 2.0 $\mu\text{g}/\text{m}^3$, compared with an outdoor concentration of 3.0 $\mu\text{g}/\text{m}^3$.²¹
- OEHHA has a toxicity database that lists TACs and their URFs. A URF describes the cancer potency of a particular TAC and is used to estimate cancer risk.⁴ Most of these URFs are extrapolated from animal studies based on continuous exposure to particular toxin. This method can have some significant uncertainties. For example, a chemical that is carcinogenic by one route of exposure is considered to be carcinogenic for all routes of exposure at its maximum potency. Also, it is not realistic for a receptor to be exposed to a continuous concentration of TACs over time. In reality, receptors are exposed to constantly changing concentration levels that would expose receptors to lower levels of TACs over time than analyzed in this analysis.

²⁰ Office of Health and Hazard Assessment, *Guidance for School Site Risk Assessment Pursuant to Health and Safety Code Section 901(f)*. February 2004.

²¹ South Coast Air Quality Management District (SCAQMD), *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Emissions*, 2002.

- The use of the SCAQMD meteorological data set and conservative exposure assumptions (e.g., assumes receptor would be located outside in the same location 24 hours per day for the entire construction duration) amongst others, likely also lead to overestimated risks.

As such, uncertainty in the health risk analysis is conservative in nature and is designed to prevent undisclosed impacts to human health. Concentrations reported in this report represent a conservative scenario that is likely an over estimation of actual pollutant concentrations.

Appendix A



Emissions Calculations and CalEEMod Output

Note: CalEEMod Output is 3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation Annual CalEEMod output file provided in Appendix E, Greenhouse Gas Emissions, of the Draft EIR

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Commercial	1.00	User Defined Unit	0.00	0.00	0
Enclosed Parking with Elevator	996.00	Space	0.00	398,400.00	0
User Defined Parking	1.00	User Defined Unit	0.00	0.00	0
High Turnover (Sit Down Restaurant)	7.50	1000sqft	0.00	7,500.00	0
Apartments Mid Rise	331.00	Dwelling Unit	3.15	343,000.00	801
Regional Shopping Center	13.41	1000sqft	0.00	13,412.00	0
Supermarket	63.08	1000sqft	0.00	63,082.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	11			Operational Year	2023
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

Project Characteristics -

Land Use - Project data per site plan dated January 2019 with updated parking plan dated February 2020 (996 spaces). Population estimate is based on 2.42 persons per household per City Planning demographic data.

Construction Phase - Construction schedule assumes an approximate 32 month timeline.

Off-road Equipment - Construction equipment per applicant data.

Off-road Equipment - Equipment per Applicant data.

Off-road Equipment -

Off-road Equipment - Construction equipment per Applicant data

Off-road Equipment -

Off-road Equipment - Construction equipment per Applicant data.

Trips and VMT - Demo debris export trips assume 130 loads (260 trips) for asphalt concrete debris (1,300 cy/10 cy hauling capacity) and 874 loads (1,748 trips) for demolition debris (151,048 sf = 377,620 ft3 of building volume = 13,986 cy/16 cy hauling capacity).

Demolition - Demolition phase includes 151,048 sf of building demolition debris (x0.046 = 6,948 tons) and 1,300 cy of asphalt debris (x2,400 lbs/cy = 1560 tons)

Grading - Pre-demolition abatement assumes 50 cy of debris export. Grading phase includes 110,000 cy of soil export.

Vehicle Trips - Mobile source emissions based on LADOT VMT Calculator without MDX Trip Adjustments that reduce VMTs due to the project's location in a high transit and urban area. See attached assumptions and data input modifications sheet.

Woodstoves - No fireplaces are proposed.

Land Use Change -

Sequestration - Sequestration includes 83 new trees per landscape plan.

Construction Off-road Equipment Mitigation - Mitigation assumes compliance with AQMD Rule 403 (dust suppression) with a watering frequency of 3x a day (=61% reduction in fugitive dust).

Area Mitigation - Application of low-VOC architectural coatings per LA Green Building Code.

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Parking	23,904.00	22,872.00

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tblAreaCoating	Area_Parking	23904	22872
tblConstructionPhase	NumDays	18.00	88.00
tblConstructionPhase	NumDays	230.00	484.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	8.00	65.00
tblConstructionPhase	NumDays	18.00	10.00
tblConstructionPhase	NumDays	5.00	15.00
tblGrading	MaterialExported	0.00	110,000.00
tblLandUse	LandUseSquareFeet	331,000.00	343,000.00
tblLandUse	LandUseSquareFeet	13,410.00	13,412.00
tblLandUse	LandUseSquareFeet	63,080.00	63,082.00
tblLandUse	LotAcreage	8.96	0.00
tblLandUse	LotAcreage	0.17	0.00
tblLandUse	LotAcreage	8.71	3.15
tblLandUse	LotAcreage	0.31	0.00
tblLandUse	LotAcreage	1.45	0.00
tblLandUse	Population	947.00	801.00
tblOffRoadEquipment	HorsePower	89.00	247.00
tblOffRoadEquipment	HorsePower	84.00	97.00
tblOffRoadEquipment	LoadFactor	0.20	0.40
tblOffRoadEquipment	LoadFactor	0.74	0.37
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblSequestration	NumberOfNewTrees	0.00	83.00
tblTripsAndVMT	HaulingTripLength	20.00	24.00
tblTripsAndVMT	HaulingTripLength	20.00	11.00
tblTripsAndVMT	HaulingTripLength	20.00	24.00

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tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	HaulingTripNumber	841.00	2,008.00
tblTripsAndVMT	VendorTripNumber	114.00	112.00
tblTripsAndVMT	WorkerTripNumber	28.00	60.00
tblTripsAndVMT	WorkerTripNumber	433.00	150.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TL	8.40	6.67
tblVehicleTrips	CC_TL	8.40	0.10
tblVehicleTrips	CC_TTP	72.50	0.00
tblVehicleTrips	CC_TTP	64.70	0.00
tblVehicleTrips	CC_TTP	74.50	0.00
tblVehicleTrips	CC_TTP	0.00	100.00
tblVehicleTrips	CC_TTP	0.00	100.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TL	16.60	0.00

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tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TTP	8.50	0.00
tblVehicleTrips	CW_TTP	16.30	0.00
tblVehicleTrips	CW_TTP	6.50	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	20.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	DV_TP	30.00	0.00
tblVehicleTrips	HO_TL	8.70	0.00
tblVehicleTrips	HO_TTP	40.60	0.00
tblVehicleTrips	HS_TL	5.90	0.00
tblVehicleTrips	HS_TTP	19.20	0.00
tblVehicleTrips	HW_TL	14.70	0.00
tblVehicleTrips	HW_TTP	40.20	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	43.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PB_TP	36.00	0.00
tblVehicleTrips	PR_TP	86.00	0.00
tblVehicleTrips	PR_TP	37.00	0.00
tblVehicleTrips	PR_TP	54.00	0.00
tblVehicleTrips	PR_TP	34.00	0.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00

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tblVehicleTrips	ST_TR	6.39	0.00
tblVehicleTrips	ST_TR	158.37	0.00
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	ST_TR	177.59	0.00
tblVehicleTrips	ST_TR	0.00	13,918.00
tblVehicleTrips	ST_TR	0.00	3,806.00
tblVehicleTrips	SU_TR	5.86	0.00
tblVehicleTrips	SU_TR	131.84	0.00
tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	SU_TR	166.44	0.00
tblVehicleTrips	SU_TR	0.00	12,781.00
tblVehicleTrips	SU_TR	0.00	3,486.00
tblVehicleTrips	WD_TR	6.65	0.00
tblVehicleTrips	WD_TR	127.15	0.00
tblVehicleTrips	WD_TR	42.70	0.00
tblVehicleTrips	WD_TR	102.24	0.00
tblVehicleTrips	WD_TR	0.00	9,648.00
tblVehicleTrips	WD_TR	0.00	2,384.00

2.0 Emissions Summary

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2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.4300	5.8360	3.3954	0.0137	0.6119	0.1572	0.7691	0.2065	0.1469	0.3534	0.0000	1,284.1828	1,284.1828	0.1616	0.0000	1,288.2220
2022	0.3786	3.7351	3.4772	9.8200e-003	0.3057	0.1255	0.4312	0.0833	0.1190	0.2023	0.0000	890.8971	890.8971	0.1017	0.0000	893.4400
2023	1.7196	1.7392	2.0573	5.4100e-003	0.1818	0.0617	0.2435	0.0493	0.0589	0.1081	0.0000	487.8560	487.8560	0.0545	0.0000	489.2176
Maximum	1.7196	5.8360	3.4772	0.0137	0.6119	0.1572	0.7691	0.2065	0.1469	0.3534	0.0000	1,284.1828	1,284.1828	0.1616	0.0000	1,288.2220

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.4300	5.8360	3.3954	0.0137	0.4227	0.1572	0.5799	0.1308	0.1469	0.2777	0.0000	1,284.1824	1,284.1824	0.1616	0.0000	1,288.2215
2022	0.3785	3.7351	3.4772	9.8200e-003	0.3057	0.1255	0.4312	0.0833	0.1190	0.2023	0.0000	890.8967	890.8967	0.1017	0.0000	893.4396
2023	1.7196	1.7392	2.0573	5.4100e-003	0.1818	0.0617	0.2435	0.0493	0.0589	0.1081	0.0000	487.8557	487.8557	0.0545	0.0000	489.2174
Maximum	1.7196	5.8360	3.4772	0.0137	0.4227	0.1572	0.5799	0.1308	0.1469	0.2777	0.0000	1,284.1824	1,284.1824	0.1616	0.0000	1,288.2215

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	17.21	0.00	13.11	22.34	0.00	11.41	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	2-15-2021	5-14-2021	1.5192	1.5192
2	5-15-2021	8-14-2021	3.1624	3.1624
3	8-15-2021	11-14-2021	1.1287	1.1287
4	11-15-2021	2-14-2022	1.0840	1.0840
5	2-15-2022	5-14-2022	1.0011	1.0011
6	5-15-2022	8-14-2022	1.0337	1.0337
7	8-15-2022	11-14-2022	1.0348	1.0348
8	11-15-2022	2-14-2023	0.9687	0.9687
9	2-15-2023	5-14-2023	0.8685	0.8685
10	5-15-2023	8-14-2023	1.1894	1.1894
11	8-15-2023	9-30-2023	0.6835	0.6835
		Highest	3.1624	3.1624

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2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.9086	0.1253	5.5322	5.5500e-003		0.3350	0.3350		0.3350	0.3350	35.1585	73.1653	108.3238	0.1103	2.3900e-003	111.7920
Energy	0.0334	0.2947	0.1893	1.8200e-003		0.0231	0.0231		0.0231	0.0231	0.0000	3,957.7689	3,957.7689	0.0920	0.0238	3,967.1570
Mobile	2.9281	13.7392	32.2051	0.1193	9.9143	0.0867	10.0010	2.6566	0.0806	2.7372	0.0000	11,042.1109	11,042.1109	0.5395	0.0000	11,055.5972
Stationary	0.0197	0.0881	0.0502	9.0000e-005		2.9000e-003	2.9000e-003		2.9000e-003	2.9000e-003	0.0000	9.1391	9.1391	1.2800e-003	0.0000	9.1712
Waste						0.0000	0.0000		0.0000	0.0000	124.1006	0.0000	124.1006	7.3341	0.0000	307.4539
Water						0.0000	0.0000		0.0000	0.0000	10.3461	326.7894	337.1356	1.0704	0.0267	371.8478
Total	5.8898	14.2474	37.9768	0.1267	9.9143	0.4476	10.3620	2.6566	0.4415	3.0982	169.6052	15,408.9737	15,578.5789	9.1475	0.0529	15,823.0190

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.9086	0.1253	5.5322	5.5500e-003		0.3350	0.3350		0.3350	0.3350	35.1585	73.1653	108.3238	0.1103	2.3900e-003	111.7920
Energy	0.0334	0.2947	0.1893	1.8200e-003		0.0231	0.0231		0.0231	0.0231	0.0000	3,938.1982	3,938.1982	0.0915	0.0237	3,947.5462
Mobile	2.9281	13.7392	32.2051	0.1193	9.9143	0.0867	10.0010	2.6566	0.0806	2.7372	0.0000	11,042.1109	11,042.1109	0.5395	0.0000	11,055.5972
Stationary	0.0197	0.0881	0.0502	9.0000e-005		2.9000e-003	2.9000e-003		2.9000e-003	2.9000e-003	0.0000	9.1391	9.1391	1.2800e-003	0.0000	9.1712
Waste						0.0000	0.0000		0.0000	0.0000	124.1006	0.0000	124.1006	7.3341	0.0000	307.4539
Water						0.0000	0.0000		0.0000	0.0000	10.3461	326.7894	337.1356	1.0704	0.0267	371.8478
Total	5.8898	14.2474	37.9768	0.1267	9.9143	0.4476	10.3620	2.6566	0.4415	3.0982	169.6052	15,389.4030	15,559.0082	9.1471	0.0528	15,803.4083

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13	0.01	0.19	0.12

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2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	58.7640
Total	58.7640

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Pre-Demolition Abatement	Site Preparation	2/15/2021	3/5/2021	5	15	
2	Demolition	Demolition	3/6/2021	5/6/2021	5	44	
3	Grading	Grading	5/7/2021	8/5/2021	5	65	
4	Building Construction	Building Construction	8/6/2021	6/14/2023	5	484	
5	Architectural Coating	Architectural Coating	6/15/2023	10/16/2023	5	88	
6	Paving	Paving	10/17/2023	10/30/2023	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 32.5

Acres of Paving: 0

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

Residential Indoor: 694,575; Residential Outdoor: 231,525; Non-Residential Indoor: 125,991; Non-Residential Outdoor: 41,997; Striped Parking Area: 22,872 (Architectural Coating – sqft)

OffRoad Equipment

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Pre-Demolition Abatement	Forklifts	1	8.00	247	0.40
Pre-Demolition Abatement	Generator Sets	2	8.00	97	0.37
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Bore/Drill Rigs	1	6.00	221	0.50
Grading	Excavators	3	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	2	6.00	203	0.36
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cement and Mortar Mixers	1	7.00	9	0.56
Building Construction	Concrete/Industrial Saws	1	6.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Aerial Lifts	3	6.00	63	0.31
Architectural Coating	Air Compressors	3	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

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
Pre-Demolition Abatement	3	8.00	0.00	10.00	14.70	6.90	24.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	2,008.00	14.70	6.90	11.00	LD_Mix	HDT_Mix	HHDT
Grading	11	60.00	0.00	13,750.00	14.70	6.90	24.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	150.00	112.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	6	87.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Pre-Demolition Abatement - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.3500e-003	0.0612	0.0494	1.2000e-004		2.7500e-003	2.7500e-003		2.6500e-003	2.6500e-003	0.0000	10.5069	10.5069	2.0600e-003	0.0000	10.5585
Total	6.3500e-003	0.0612	0.0494	1.2000e-004	0.0000	2.7500e-003	2.7500e-003	0.0000	2.6500e-003	2.6500e-003	0.0000	10.5069	10.5069	2.0600e-003	0.0000	10.5585

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3.2 Pre-Demolition Abatement - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.4700e-003	3.2000e-004	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.4378	0.4378	3.0000e-005	0.0000	0.4385
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.8000e-004	2.0900e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5734	0.5734	2.0000e-005	0.0000	0.5738
Total	2.9000e-004	1.6500e-003	2.4100e-003	1.0000e-005	7.6000e-004	0.0000	7.7000e-004	2.0000e-004	0.0000	2.1000e-004	0.0000	1.0112	1.0112	5.0000e-005	0.0000	1.0123

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.3500e-003	0.0612	0.0494	1.2000e-004		2.7500e-003	2.7500e-003		2.6500e-003	2.6500e-003	0.0000	10.5068	10.5068	2.0600e-003	0.0000	10.5585
Total	6.3500e-003	0.0612	0.0494	1.2000e-004	0.0000	2.7500e-003	2.7500e-003	0.0000	2.6500e-003	2.6500e-003	0.0000	10.5068	10.5068	2.0600e-003	0.0000	10.5585

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3.2 Pre-Demolition Abatement - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.4700e-003	3.2000e-004	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.4378	0.4378	3.0000e-005	0.0000	0.4385
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.8000e-004	2.0900e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5734	0.5734	2.0000e-005	0.0000	0.5738
Total	2.9000e-004	1.6500e-003	2.4100e-003	1.0000e-005	7.6000e-004	0.0000	7.7000e-004	2.0000e-004	0.0000	2.1000e-004	0.0000	1.0112	1.0112	5.0000e-005	0.0000	1.0123

3.3 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0910	0.0000	0.0910	0.0138	0.0000	0.0138	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0696	0.6917	0.4744	8.5000e-004		0.0341	0.0341		0.0317	0.0317	0.0000	74.8017	74.8017	0.0211	0.0000	75.3281
Total	0.0696	0.6917	0.4744	8.5000e-004	0.0910	0.0341	0.1252	0.0138	0.0317	0.0455	0.0000	74.8017	74.8017	0.0211	0.0000	75.3281

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3.3 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.8200e-003	0.1861	0.0362	4.7000e-004	9.5000e-003	4.5000e-004	9.9600e-003	2.6100e-003	4.3000e-004	3.0400e-003	0.0000	45.8596	45.8596	3.5900e-003	0.0000	45.9494
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3800e-003	1.0200e-003	0.0115	3.0000e-005	3.6200e-003	3.0000e-005	3.6500e-003	9.6000e-004	3.0000e-005	9.9000e-004	0.0000	3.1537	3.1537	8.0000e-005	0.0000	3.1558
Total	6.2000e-003	0.1871	0.0477	5.0000e-004	0.0131	4.8000e-004	0.0136	3.5700e-003	4.6000e-004	4.0300e-003	0.0000	49.0133	49.0133	3.6700e-003	0.0000	49.1052

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0355	0.0000	0.0355	5.3800e-003	0.0000	5.3800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0696	0.6917	0.4744	8.5000e-004		0.0341	0.0341		0.0317	0.0317	0.0000	74.8016	74.8016	0.0211	0.0000	75.3280
Total	0.0696	0.6917	0.4744	8.5000e-004	0.0355	0.0341	0.0696	5.3800e-003	0.0317	0.0371	0.0000	74.8016	74.8016	0.0211	0.0000	75.3280

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3.3 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.8200e-003	0.1861	0.0362	4.7000e-004	9.5000e-003	4.5000e-004	9.9600e-003	2.6100e-003	4.3000e-004	3.0400e-003	0.0000	45.8596	45.8596	3.5900e-003	0.0000	45.9494
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3800e-003	1.0200e-003	0.0115	3.0000e-005	3.6200e-003	3.0000e-005	3.6500e-003	9.6000e-004	3.0000e-005	9.9000e-004	0.0000	3.1537	3.1537	8.0000e-005	0.0000	3.1558
Total	6.2000e-003	0.1871	0.0477	5.0000e-004	0.0131	4.8000e-004	0.0136	3.5700e-003	4.6000e-004	4.0300e-003	0.0000	49.0133	49.0133	3.6700e-003	0.0000	49.1052

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2192	0.0000	0.2192	0.1104	0.0000	0.1104	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1124	1.2060	0.8565	1.8300e-003		0.0530	0.0530		0.0488	0.0488	0.0000	161.1037	161.1037	0.0521	0.0000	162.4063
Total	0.1124	1.2060	0.8565	1.8300e-003	0.2192	0.0530	0.2722	0.1104	0.0488	0.1592	0.0000	161.1037	161.1037	0.0521	0.0000	162.4063

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3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0583	2.0218	0.4388	6.1300e-003	0.1418	6.4600e-003	0.1483	0.0389	6.1800e-003	0.0451	0.0000	601.9455	601.9455	0.0398	0.0000	602.9415
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.1300e-003	6.0100e-003	0.0680	2.1000e-004	0.0214	1.6000e-004	0.0216	5.6800e-003	1.5000e-004	5.8300e-003	0.0000	18.6354	18.6354	5.0000e-004	0.0000	18.6479
Total	0.0664	2.0278	0.5067	6.3400e-003	0.1632	6.6200e-003	0.1698	0.0446	6.3300e-003	0.0509	0.0000	620.5809	620.5809	0.0403	0.0000	621.5893

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0855	0.0000	0.0855	0.0431	0.0000	0.0431	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1124	1.2060	0.8565	1.8300e-003		0.0530	0.0530		0.0488	0.0488	0.0000	161.1035	161.1035	0.0521	0.0000	162.4061
Total	0.1124	1.2060	0.8565	1.8300e-003	0.0855	0.0530	0.1385	0.0431	0.0488	0.0918	0.0000	161.1035	161.1035	0.0521	0.0000	162.4061

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3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0583	2.0218	0.4388	6.1300e-003	0.1418	6.4600e-003	0.1483	0.0389	6.1800e-003	0.0451	0.0000	601.9455	601.9455	0.0398	0.0000	602.9415
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.1300e-003	6.0100e-003	0.0680	2.1000e-004	0.0214	1.6000e-004	0.0216	5.6800e-003	1.5000e-004	5.8300e-003	0.0000	18.6354	18.6354	5.0000e-004	0.0000	18.6479
Total	0.0664	2.0278	0.5067	6.3400e-003	0.1632	6.6200e-003	0.1698	0.0446	6.3300e-003	0.0509	0.0000	620.5809	620.5809	0.0403	0.0000	621.5893

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1188	1.0617	1.0388	1.7100e-003		0.0584	0.0584		0.0553	0.0553	0.0000	146.2649	146.2649	0.0311	0.0000	147.0419
Total	0.1188	1.0617	1.0388	1.7100e-003		0.0584	0.0584		0.0553	0.0553	0.0000	146.2649	146.2649	0.0311	0.0000	147.0419

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3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0169	0.5744	0.1424	1.5000e-003	0.0374	1.1600e-003	0.0386	0.0108	1.1100e-003	0.0119	0.0000	144.9254	144.9254	9.1700e-003	0.0000	145.1545
Worker	0.0331	0.0245	0.2770	8.4000e-004	0.0872	6.5000e-004	0.0879	0.0232	6.0000e-004	0.0238	0.0000	75.9750	75.9750	2.0400e-003	0.0000	76.0259
Total	0.0500	0.5989	0.4194	2.3400e-003	0.1246	1.8100e-003	0.1265	0.0340	1.7100e-003	0.0357	0.0000	220.9003	220.9003	0.0112	0.0000	221.1804

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1188	1.0617	1.0388	1.7100e-003		0.0584	0.0584		0.0553	0.0553	0.0000	146.2647	146.2647	0.0311	0.0000	147.0417
Total	0.1188	1.0617	1.0388	1.7100e-003		0.0584	0.0584		0.0553	0.0553	0.0000	146.2647	146.2647	0.0311	0.0000	147.0417

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3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0169	0.5744	0.1424	1.5000e-003	0.0374	1.1600e-003	0.0386	0.0108	1.1100e-003	0.0119	0.0000	144.9254	144.9254	9.1700e-003	0.0000	145.1545
Worker	0.0331	0.0245	0.2770	8.4000e-004	0.0872	6.5000e-004	0.0879	0.0232	6.0000e-004	0.0238	0.0000	75.9750	75.9750	2.0400e-003	0.0000	76.0259
Total	0.0500	0.5989	0.4194	2.3400e-003	0.1246	1.8100e-003	0.1265	0.0340	1.7100e-003	0.0357	0.0000	220.9003	220.9003	0.0112	0.0000	221.1804

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2634	2.3450	2.5196	4.1900e-003		0.1214	0.1214		0.1152	0.1152	0.0000	358.8772	358.8772	0.0756	0.0000	360.7665
Total	0.2634	2.3450	2.5196	4.1900e-003		0.1214	0.1214		0.1152	0.1152	0.0000	358.8772	358.8772	0.0756	0.0000	360.7665

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3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0389	1.3359	0.3301	3.6400e-003	0.0918	2.4600e-003	0.0942	0.0265	2.3500e-003	0.0288	0.0000	352.3475	352.3475	0.0216	0.0000	352.8883
Worker	0.0763	0.0543	0.6275	1.9900e-003	0.2139	1.5600e-003	0.2155	0.0568	1.4400e-003	0.0583	0.0000	179.6724	179.6724	4.5100e-003	0.0000	179.7853
Total	0.1152	1.3901	0.9576	5.6300e-003	0.3057	4.0200e-003	0.3097	0.0833	3.7900e-003	0.0871	0.0000	532.0199	532.0199	0.0261	0.0000	532.6736

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2634	2.3450	2.5196	4.1900e-003		0.1214	0.1214		0.1152	0.1152	0.0000	358.8768	358.8768	0.0756	0.0000	360.7660
Total	0.2634	2.3450	2.5196	4.1900e-003		0.1214	0.1214		0.1152	0.1152	0.0000	358.8768	358.8768	0.0756	0.0000	360.7660

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3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0389	1.3359	0.3301	3.6400e-003	0.0918	2.4600e-003	0.0942	0.0265	2.3500e-003	0.0288	0.0000	352.3475	352.3475	0.0216	0.0000	352.8883
Worker	0.0763	0.0543	0.6275	1.9900e-003	0.2139	1.5600e-003	0.2155	0.0568	1.4400e-003	0.0583	0.0000	179.6724	179.6724	4.5100e-003	0.0000	179.7853
Total	0.1152	1.3901	0.9576	5.6300e-003	0.3057	4.0200e-003	0.3097	0.0833	3.7900e-003	0.0871	0.0000	532.0199	532.0199	0.0261	0.0000	532.6736

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1106	0.9821	1.1362	1.9000e-003		0.0477	0.0477		0.0453	0.0453	0.0000	162.9220	162.9220	0.0340	0.0000	163.7708
Total	0.1106	0.9821	1.1362	1.9000e-003		0.0477	0.0477		0.0453	0.0453	0.0000	162.9220	162.9220	0.0340	0.0000	163.7708

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0132	0.4562	0.1340	1.6000e-003	0.0417	5.2000e-004	0.0422	0.0120	5.0000e-004	0.0125	0.0000	155.0914	155.0914	8.5400e-003	0.0000	155.3048
Worker	0.0326	0.0223	0.2626	8.7000e-004	0.0971	6.9000e-004	0.0978	0.0258	6.3000e-004	0.0264	0.0000	78.5025	78.5025	1.8500e-003	0.0000	78.5487
Total	0.0458	0.4785	0.3965	2.4700e-003	0.1388	1.2100e-003	0.1400	0.0378	1.1300e-003	0.0389	0.0000	233.5939	233.5939	0.0104	0.0000	233.8535

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1106	0.9821	1.1362	1.9000e-003		0.0477	0.0477		0.0453	0.0453	0.0000	162.9218	162.9218	0.0340	0.0000	163.7706
Total	0.1106	0.9821	1.1362	1.9000e-003		0.0477	0.0477		0.0453	0.0453	0.0000	162.9218	162.9218	0.0340	0.0000	163.7706

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0132	0.4562	0.1340	1.6000e-003	0.0417	5.2000e-004	0.0422	0.0120	5.0000e-004	0.0125	0.0000	155.0914	155.0914	8.5400e-003	0.0000	155.3048
Worker	0.0326	0.0223	0.2626	8.7000e-004	0.0971	6.9000e-004	0.0978	0.0258	6.3000e-004	0.0264	0.0000	78.5025	78.5025	1.8500e-003	0.0000	78.5487
Total	0.0458	0.4785	0.3965	2.4700e-003	0.1388	1.2100e-003	0.1400	0.0378	1.1300e-003	0.0389	0.0000	233.5939	233.5939	0.0104	0.0000	233.8535

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.5154					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0287	0.2248	0.3472	5.6000e-004		0.0103	0.0103		0.0102	0.0102	0.0000	48.3081	48.3081	6.7400e-003	0.0000	48.4766
Total	1.5442	0.2248	0.3472	5.6000e-004		0.0103	0.0103		0.0102	0.0102	0.0000	48.3081	48.3081	6.7400e-003	0.0000	48.4766

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0141	9.6400e-003	0.1136	3.8000e-004	0.0420	3.0000e-004	0.0423	0.0112	2.7000e-004	0.0114	0.0000	33.9557	33.9557	8.0000e-004	0.0000	33.9756
Total	0.0141	9.6400e-003	0.1136	3.8000e-004	0.0420	3.0000e-004	0.0423	0.0112	2.7000e-004	0.0114	0.0000	33.9557	33.9557	8.0000e-004	0.0000	33.9756

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.5154					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0287	0.2248	0.3472	5.6000e-004		0.0103	0.0103		0.0102	0.0102	0.0000	48.3080	48.3080	6.7400e-003	0.0000	48.4765
Total	1.5442	0.2248	0.3472	5.6000e-004		0.0103	0.0103		0.0102	0.0102	0.0000	48.3080	48.3080	6.7400e-003	0.0000	48.4765

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0141	9.6400e-003	0.1136	3.8000e-004	0.0420	3.0000e-004	0.0423	0.0112	2.7000e-004	0.0114	0.0000	33.9557	33.9557	8.0000e-004	0.0000	33.9756
Total	0.0141	9.6400e-003	0.1136	3.8000e-004	0.0420	3.0000e-004	0.0423	0.0112	2.7000e-004	0.0114	0.0000	33.9557	33.9557	8.0000e-004	0.0000	33.9756

3.7 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.5900e-003	0.0440	0.0610	9.0000e-005		2.1800e-003	2.1800e-003		2.0100e-003	2.0100e-003	0.0000	8.1893	8.1893	2.5700e-003	0.0000	8.2536
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.5900e-003	0.0440	0.0610	9.0000e-005		2.1800e-003	2.1800e-003		2.0100e-003	2.0100e-003	0.0000	8.1893	8.1893	2.5700e-003	0.0000	8.2536

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

3.7 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.5000e-004	2.9700e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.8870	0.8870	2.0000e-005	0.0000	0.8876
Total	3.7000e-004	2.5000e-004	2.9700e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.8870	0.8870	2.0000e-005	0.0000	0.8876

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.5900e-003	0.0440	0.0610	9.0000e-005		2.1800e-003	2.1800e-003		2.0100e-003	2.0100e-003	0.0000	8.1893	8.1893	2.5700e-003	0.0000	8.2536
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.5900e-003	0.0440	0.0610	9.0000e-005		2.1800e-003	2.1800e-003		2.0100e-003	2.0100e-003	0.0000	8.1893	8.1893	2.5700e-003	0.0000	8.2536

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

3.7 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.5000e-004	2.9700e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.8870	0.8870	2.0000e-005	0.0000	0.8876
Total	3.7000e-004	2.5000e-004	2.9700e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.8870	0.8870	2.0000e-005	0.0000	0.8876

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.9281	13.7392	32.2051	0.1193	9.9143	0.0867	10.0010	2.6566	0.0806	2.7372	0.0000	11,042.1109	11,042.1109	0.5395	0.0000	11,055.5972
Unmitigated	2.9281	13.7392	32.2051	0.1193	9.9143	0.0867	10.0010	2.6566	0.0806	2.7372	0.0000	11,042.1109	11,042.1109	0.5395	0.0000	11,055.5972

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
Supermarket	0.00	0.00	0.00		
User Defined Commercial	9,648.00	13,918.00	12,781.00	25,991,843	25,991,843
User Defined Parking	2,384.00	3,806.00	3,486.00	99,902	99,902
Total	12,032.00	17,724.00	16,267.00	26,091,745	26,091,745

4.3 Trip Type Information

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
High Turnover (Sit Down	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Regional Shopping Center	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Supermarket	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
User Defined Commercial	0.00	6.67	0.00	0.00	100.00	0.00	100	0	0
User Defined Parking	0.00	0.10	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.550151	0.042593	0.202457	0.116946	0.015037	0.005825	0.021699	0.034933	0.002123	0.001780	0.004876	0.000710	0.000868
Enclosed Parking with Elevator	0.550151	0.042593	0.202457	0.116946	0.015037	0.005825	0.021699	0.034933	0.002123	0.001780	0.004876	0.000710	0.000868
High Turnover (Sit Down Restaurant)	0.550151	0.042593	0.202457	0.116946	0.015037	0.005825	0.021699	0.034933	0.002123	0.001780	0.004876	0.000710	0.000868
Regional Shopping Center	0.550151	0.042593	0.202457	0.116946	0.015037	0.005825	0.021699	0.034933	0.002123	0.001780	0.004876	0.000710	0.000868
Supermarket	0.550151	0.042593	0.202457	0.116946	0.015037	0.005825	0.021699	0.034933	0.002123	0.001780	0.004876	0.000710	0.000868
User Defined Commercial	0.550151	0.042593	0.202457	0.116946	0.015037	0.005825	0.021699	0.034933	0.002123	0.001780	0.004876	0.000710	0.000868
User Defined Parking	0.550151	0.042593	0.202457	0.116946	0.015037	0.005825	0.021699	0.034933	0.002123	0.001780	0.004876	0.000710	0.000868

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated							0.0000	0.0000		0.0000	0.0000	3,607.5709	3,607.5709	0.0852	0.0176	3,614.9541
Electricity Unmitigated							0.0000	0.0000		0.0000	0.0000	3,627.1416	3,627.1416	0.0857	0.0177	3,634.5649
NaturalGas Mitigated	0.0334	0.2947	0.1893	1.8200e-003		0.0231	0.0231		0.0231	0.0231	0.0000	330.6274	330.6274	6.3400e-003	6.0600e-003	332.5921
NaturalGas Unmitigated	0.0334	0.2947	0.1893	1.8200e-003		0.0231	0.0231		0.0231	0.0231	0.0000	330.6274	330.6274	6.3400e-003	6.0600e-003	332.5921

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	3.05081e+006	0.0165	0.1406	0.0598	9.0000e-004		0.0114	0.0114		0.0114	0.0114	0.0000	162.8027	162.8027	3.1200e-003	2.9800e-003	163.7701
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	1.7307e+006	9.3300e-003	0.0848	0.0713	5.1000e-004		6.4500e-003	6.4500e-003		6.4500e-003	6.4500e-003	0.0000	92.3567	92.3567	1.7700e-003	1.6900e-003	92.9056
Regional Shopping Center	21995.7	1.2000e-004	1.0800e-003	9.1000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1738	1.1738	2.0000e-005	2.0000e-005	1.1808
Supermarket	1.39222e+006	7.5100e-003	0.0683	0.0573	4.1000e-004		5.1900e-003	5.1900e-003		5.1900e-003	5.1900e-003	0.0000	74.2942	74.2942	1.4200e-003	1.3600e-003	74.7356
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Parking	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0334	0.2948	0.1893	1.8300e-003		0.0231	0.0231		0.0231	0.0231	0.0000	330.6274	330.6274	6.3300e-003	6.0500e-003	332.5921

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	3.05081e+006	0.0165	0.1406	0.0598	9.0000e-004		0.0114	0.0114		0.0114	0.0114	0.0000	162.8027	162.8027	3.1200e-003	2.9800e-003	163.7701
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	1.7307e+006	9.3300e-003	0.0848	0.0713	5.1000e-004		6.4500e-003	6.4500e-003		6.4500e-003	6.4500e-003	0.0000	92.3567	92.3567	1.7700e-003	1.6900e-003	92.9056
Regional Shopping Center	21995.7	1.2000e-004	1.0800e-003	9.1000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1738	1.1738	2.0000e-005	2.0000e-005	1.1808
Supermarket	1.39222e+006	7.5100e-003	0.0683	0.0573	4.1000e-004		5.1900e-003	5.1900e-003		5.1900e-003	5.1900e-003	0.0000	74.2942	74.2942	1.4200e-003	1.3600e-003	74.7356
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Parking	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0334	0.2948	0.1893	1.8300e-003		0.0231	0.0231		0.0231	0.0231	0.0000	330.6274	330.6274	6.3300e-003	6.0500e-003	332.5921

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.31079e+006	730.0577	0.0172	3.5700e-003	731.5518
Enclosed Parking with Elevator	2.33462e+006	1,300.2958	0.0307	6.3500e-003	1,302.9570
High Turnover (Sit Down Restaurant)	331050	184.3821	4.3500e-003	9.0000e-004	184.7595
Regional Shopping Center	181062	100.8446	2.3800e-003	4.9000e-004	101.0510
Supermarket	2.35485e+006	1,311.5615	0.0310	6.4100e-003	1,314.2457
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Parking	0	0.0000	0.0000	0.0000	0.0000
Total		3,627.1416	0.0857	0.0177	3,634.5649

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.27565e+006	710.4870	0.0168	3.4700e-003	711.9411
Enclosed Parking with Elevator	2.33462e+006	1,300.2958	0.0307	6.3500e-003	1,302.9570
High Turnover (Sit Down Restaurant)	331050	184.3821	4.3500e-003	9.0000e-004	184.7595
Regional Shopping Center	181062	100.8446	2.3800e-003	4.9000e-004	101.0510
Supermarket	2.35485e+006	1,311.5615	0.0310	6.4100e-003	1,314.2457
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Parking	0	0.0000	0.0000	0.0000	0.0000
Total		3,607.5709	0.0852	0.0176	3,614.9541

6.0 Area Detail

6.1 Mitigation Measures Area

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.9086	0.1253	5.5322	5.5500e-003		0.3350	0.3350		0.3350	0.3350	35.1585	73.1653	108.3238	0.1103	2.3900e-003	111.7920
Unmitigated	2.9086	0.1253	5.5322	5.5500e-003		0.3350	0.3350		0.3350	0.3350	35.1585	73.1653	108.3238	0.1103	2.3900e-003	111.7920

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1515					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5687					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.0842	0.0859	2.1041	5.3700e-003		0.3161	0.3161		0.3161	0.3161	35.1585	67.5626	102.7211	0.1049	2.3900e-003	106.0535
Landscaping	0.1041	0.0395	3.4281	1.8000e-004		0.0190	0.0190		0.0190	0.0190	0.0000	5.6027	5.6027	5.4300e-003	0.0000	5.7385
Total	2.9086	0.1253	5.5322	5.5500e-003		0.3350	0.3350		0.3350	0.3350	35.1585	73.1653	108.3238	0.1103	2.3900e-003	111.7920

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1515					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5687					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.0842	0.0859	2.1041	5.3700e-003		0.3161	0.3161		0.3161	0.3161	35.1585	67.5626	102.7211	0.1049	2.3900e-003	106.0535
Landscaping	0.1041	0.0395	3.4281	1.8000e-004		0.0190	0.0190		0.0190	0.0190	0.0000	5.6027	5.6027	5.4300e-003	0.0000	5.7385
Total	2.9086	0.1253	5.5322	5.5500e-003		0.3350	0.3350		0.3350	0.3350	35.1585	73.1653	108.3238	0.1103	2.3900e-003	111.7920

7.0 Water Detail

7.1 Mitigation Measures Water

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	337.1356	1.0704	0.0267	371.8478
Unmitigated	337.1356	1.0704	0.0267	371.8478

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	21.566 / 13.5959	247.3722	0.7084	0.0178	270.3774
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	2.2765 / 0.145309	18.1310	0.0746	1.8400e-003	20.5431
Regional Shopping Center	0.993313 / 0.608804	11.2860	0.0326	8.2000e-004	12.3454
Supermarket	7.77576 / 0.240487	60.3463	0.2547	6.2700e-003	68.5820
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Parking	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		337.1356	1.0704	0.0267	371.8478

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	21.566 / 13.5959	247.3722	0.7084	0.0178	270.3774
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	2.2765 / 0.145309	18.1310	0.0746	1.8400e-003	20.5431
Regional Shopping Center	0.993313 / 0.608804	11.2860	0.0326	8.2000e-004	12.3454
Supermarket	7.77576 / 0.240487	60.3463	0.2547	6.2700e-003	68.5820
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Parking	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		337.1356	1.0704	0.0267	371.8478

8.0 Waste Detail

8.1 Mitigation Measures Waste

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	124.1006	7.3341	0.0000	307.4539
Unmitigated	124.1006	7.3341	0.0000	307.4539

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	152.26	30.9074	1.8266	0.0000	76.5718
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	89.25	18.1169	1.0707	0.0000	44.8840
Regional Shopping Center	14.08	2.8581	0.1689	0.0000	7.0809
Supermarket	355.77	72.2181	4.2680	0.0000	178.9173
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Parking	0	0.0000	0.0000	0.0000	0.0000
Total		124.1005	7.3341	0.0000	307.4539

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	152.26	30.9074	1.8266	0.0000	76.5718
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	89.25	18.1169	1.0707	0.0000	44.8840
Regional Shopping Center	14.08	2.8581	0.1689	0.0000	7.0809
Supermarket	355.77	72.2181	4.2680	0.0000	178.9173
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Parking	0	0.0000	0.0000	0.0000	0.0000
Total		124.1005	7.3341	0.0000	307.4539

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	2	1	12	1000	0.73	Diesel

Boilers

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

Equipment Type	Number
----------------	--------

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (750 - 9999 HP)	0.0197	0.0881	0.0502	9.0000e-005		2.9000e-003	2.9000e-003		2.9000e-003	2.9000e-003	0.0000	9.1391	9.1391	1.2800e-003	0.0000	9.1712
Total	0.0197	0.0881	0.0502	9.0000e-005		2.9000e-003	2.9000e-003		2.9000e-003	2.9000e-003	0.0000	9.1391	9.1391	1.2800e-003	0.0000	9.1712

11.0 Vegetation

3rd and Fairfax Mixed-Use Project - Without GHG Reduction Features or Mitigation - South Coast AQMD Air District, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	58.7640	0.0000	0.0000	58.7640

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	83	58.7640	0.0000	0.0000	58.7640
Total		58.7640	0.0000	0.0000	58.7640

3rd and Fairfax

Construction Emissions (Annual Diesel Particulate Matter)

CalEEMod Output (tons/year)

Phase No.	Phase	Year	Mitigated	On/Off Site	Category	Exhaust PM10
2	Pre-Demolition	2021	Mitigated	On-site	Off-Road	0.00275
3	Demolition	2021	Mitigated	On-site	Off-Road	0.0341
4	Grading	2021	Mitigated	On-site	Off-Road	0.053
5	Building Construction	2021	Mitigated	On-site	Off-Road	0.0584
5	Building Construction	2022	Mitigated	On-site	Off-Road	0.1214
5	Building Construction	2023	Mitigated	On-site	Off-Road	0.0477
6	Architectural Coating	2023	Mitigated	On-site	Off-Road	0.0103
7	Paving	2023	Mitigated	On-site	Off-Road	0.00218

Annual Totals (tons)

Daily Max to Annual Ratio	80%
Year	Totals (tons/year)
2021	0.1186
2022	0.0971
2023	0.0481
Total	0.2639
Construction Duration (years)	2.7
Hours per Day	8
Seconds per Day	28,800
Construction Duration (seconds)	28,382,400
Annual Average Emission Rate (g/s)	0.0084

3rd and Fairfax

Operational HRA - On-site Truck Emissions

Diesel Particulate Emission Factors - T7 Single Truck (EMFAC2014 - Year 2023)

Speed		g/mi	
5		0.0100	Idle emission factor
15		0.0069	On-site travel emission factor. T8 Tractor

Emissions Calculations (Loading Docks)

Land Use	TSF	Truck Trips/TSF	Truck Trips
Multi-Family (331 du)	343	0.011	3.8
Supermarket	63.082		18.0
Commercial	20.912	0.324	6.8
Total	426.994		28.5

National Cooperative Highway Research Program (NCHRP) Synthesis 298 Truck Trip Generation Data, 2001, http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_syn_298.pdf.

Transportation Northwest, Truck Trip Generation by Grocery Stores, Final Report TNW2010-04,

Parameter	Value	
Average Trucks per Day	29	
Days per Year	312	6 days per week
Trucks per Year	9,048	
Idle time per Truck (min)	15	5 minutes x 3 (enter, loading, exit)
Idle time per Truck (hrs)	0.25	
Idle time per year (hrs)	2262	
Idle Emission Factor (g/hr)	0.0100	
Idle emissions per year (g)	22.53	
Annual Idle emission rate (g/s)	2.14E-06	8-hour operation

Transportation Refrigeration Unit (TRU)

Emission Rate (g/hr)	0.540	See TRU Emission Factor Calculation
TRU Operation Time per Truck (hrs)	2	Duration of time at loading dock
Daily Number of Trucks with TRU (%)	6	Typical
Total Annual TRU Hours	3754	6 days per week operation
Total Annual TRU Emissions (g)	2027.3	
Annual TRU Emission Rate (g/s)	1.93E-04	8-hour operation
Total Emission Rate (g/s)	1.95E-04	AERMOD Input - Idle + Travel + TRU

CARB Draft 2019 TRU Emissions Inventory Output

Scenario	Calendar Year	Equipment Sector	Air Basin	Equipment Type	Horsepower Group	Population	Activity	PM10
Existing ATCM	2023	trailgc	SC	genca	GE23LT25	1,068	1000	0.00394348
Existing ATCM	2023	trailgc	SC	genca	GE25	395	1000	0.00049853
Existing ATCM	2023	trailgc	SC	genca	LT23	0	1000	0
Existing ATCM	2023	trailgc	SC	genoos	GE23LT25	4,176	1000	0.00244897
Existing ATCM	2023	trailgc	SC	genoos	GE25	1,639	1000	0.0004003
Existing ATCM	2023	trailgc	SC	genoos	LT23	0	1000	0
Existing ATCM	2023	trailgc	SC	truca	GE23LT25	3,789	2201	0.04084928
Existing ATCM	2023	trailgc	SC	truca	GE25	8,053	2201	0.0763607
Existing ATCM	2023	trailgc	SC	truoos	GE23LT25	31,555	2201	0.05459903
Existing ATCM	2023	trailgc	SC	truoos	GE25	15,331	2201	0.02793155
Existing ATCM	2023	truck	SC	truca	LT23	2,495	1360	0.01822637
Existing ATCM	2023	truck	SC	truoos	LT23	44	1360	3.8923E-05

Total TRU Hours (Annual)	139,989,951	All TRUs in South Coast Air Basin
Total PM10 Emissions (tons/year)	82.23	Total tons per day x 365

Emission Rate (tons/hour)	5.87E-07
Emission Rate (lbs/hr)	0.0012
Emission Rate (g/hr)	0.53

Units

All population is one TRU unit
 All activity is in hours per year of run time
 All emissions are in standard tons per day
 All fuel consumption is gallons per year

Source: <https://ww3.arb.ca.gov/msei/ordiesel/draft2019truei.pdf>

Source: EMFAC2021 (v1.0.1) Emission Rates

Region Type: Air Basin

Region: South Coast

Calendar Year: 2023

Season: Annual

Vehicle Classification: EMFAC202x Categories

Units: miles/day for CVMT and EVMT, g/mile for RUNEX, PMBW and PMTW, mph for Speed

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	PM2.5_RUNEX	PM10_RUNEX
South Coast	2023	T7 Tractor Class 8	Aggregate		5 Diesel	0.010	0.010
South Coast	2023	T7 Tractor Class 8	Aggregate		15 Diesel	0.007	0.007

Appendix B



Carcinogenic and Non-Carcinogenic Risk Calculations

3rd and Fairfax - Construction Health Risk Assessment

Cancer Risk Calculations

Residential Receptor - 70 year Exposure Duration

Diesel Particulate Matter Emission Rate Calculation / Scaler

	Year -->	2021-2023	2024-2090
Average Annual Emission Rate (g/s) ^a		8.43E-03	1.95E-04
Scaler Concentration (ug/m3) ^b		4.79	7.5
Diesel Particulate Concentration (ug/m3)		0.040	0.0015

Cancer Risk Calculations - DPM

Parameter	2021-2023	2024-2090	Total
Breathing Rate	393	393	
Exposure Frequency (EF)	350	350	
Exposure Duration (ED) (years)	2.70	67.30	70
AT	25550	25550	
70-Year (Lifetime) Concentration (ug/m3)	4.04E-02	1.47E-03	
70-Year (Lifetime) Dose (mg/kg-d)	1.52E-05	5.53E-07	
Carcinogen Potency (CPF) (mg/kg-d) ⁻¹ - Diesel Particulate Matter	1.1	1.1	
Cancer Risk	6.46E-07	5.84E-07	1.23E-06
Risk per Million (DPM)	0.6	0.6	1.2

^a Emissions based on a 32-month average

^b Scaler concentration based on an AERMOD emission rate of 1 g/s, 8-hours per day

School Receptor - Student - 9 Year Exposure Duration

Diesel Particulate Matter Emission Rate Calculation / Scaler

	Year -->	2021-2023	2024-2030
Average Annual Emission Rate (g/s) ^a		8.43E-03	1.95E-04
Scaler Concentration (ug/m3) ^b		38.79	8.00
Diesel Particulate Concentration (ug/m3)		0.327	0.002

Cancer Risk Calculations - DPM

Parameter	2021-2023	2024-2030	Total
Breathing Rate	581	581	
Exposure Frequency (EF)	180	180	
Exposure Duration (ED) (years)	2.70	6.30	9
AT	25550	25550	
70-Year (Lifetime) Concentration (ug/m3)	3.27E-01	1.56E-03	
70-Year (Lifetime) Dose (mg/kg-d)	9.37E-05	4.47E-07	
Carcinogen Potency (CPF) (mg/kg-d) ⁻¹ - Diesel Particulate Matter	1.1	1.1	
Cancer Risk	3.98E-06	4.43E-08	4.02E-06
Risk per Million (DPM)	4.0	0.04	4.0

^a Emissions based on a 32-month average

^b Scaler concentration based on an AERMOD emission rate of 1 g/s, 8-hours per day

3rd and Fairfax - Construction Health Risk Assessment

Cancer Risk Calculations

School Receptor - Worker - 30 Year Exposure Duration

Diesel Particulate Matter Emission Rate Calculation / Scaler

	Year -->	2021-2023	2024-2050
Average Annual Emission Rate (g/s) ^a		0.008	1.95E-04
Scaler Concentration (ug/m3) ^b		38.79	8.00
Diesel Particulate Concentration (ug/m3)		0.327	0.002

Cancer Risk Calculations - DPM

Parameter	2021-2023	2024-2050	Total
Breathing Rate	393	393	
Exposure Frequency (EF)	260	260	
Exposure Duration (ED) (years)	2.70	27.30	30
AT	25550	25550	
70-Year (Lifetime) Concentration (ug/m3)	3.27E-01	1.56E-03	
70-Year (Lifetime) Dose (mg/kg-d)	9.16E-05	4.37E-07	
Carcinogen Potency (CPF) (mg/kg-d) ⁻¹ - Diesel Particulate Matter	1.1	1.1	
Cancer Risk	3.89E-06	1.87E-07	4.07E-06
Risk per Million (DPM)	3.9	0.2	4.1

^a Emissions based on a 32-month average

^b Scaler concentration based on an AERMOD emission rate of 1 g/s, 8-hours per day

Chronic Risk Calculations - DPM

Receptor	Annual Concentration (ug/m3)	Chronic Inhalation REL (ug/m3)	Chronic Risk (HI)
Residential	4.0E-02	5	8.1E-03
School	3.3E-01	5	6.5E-02

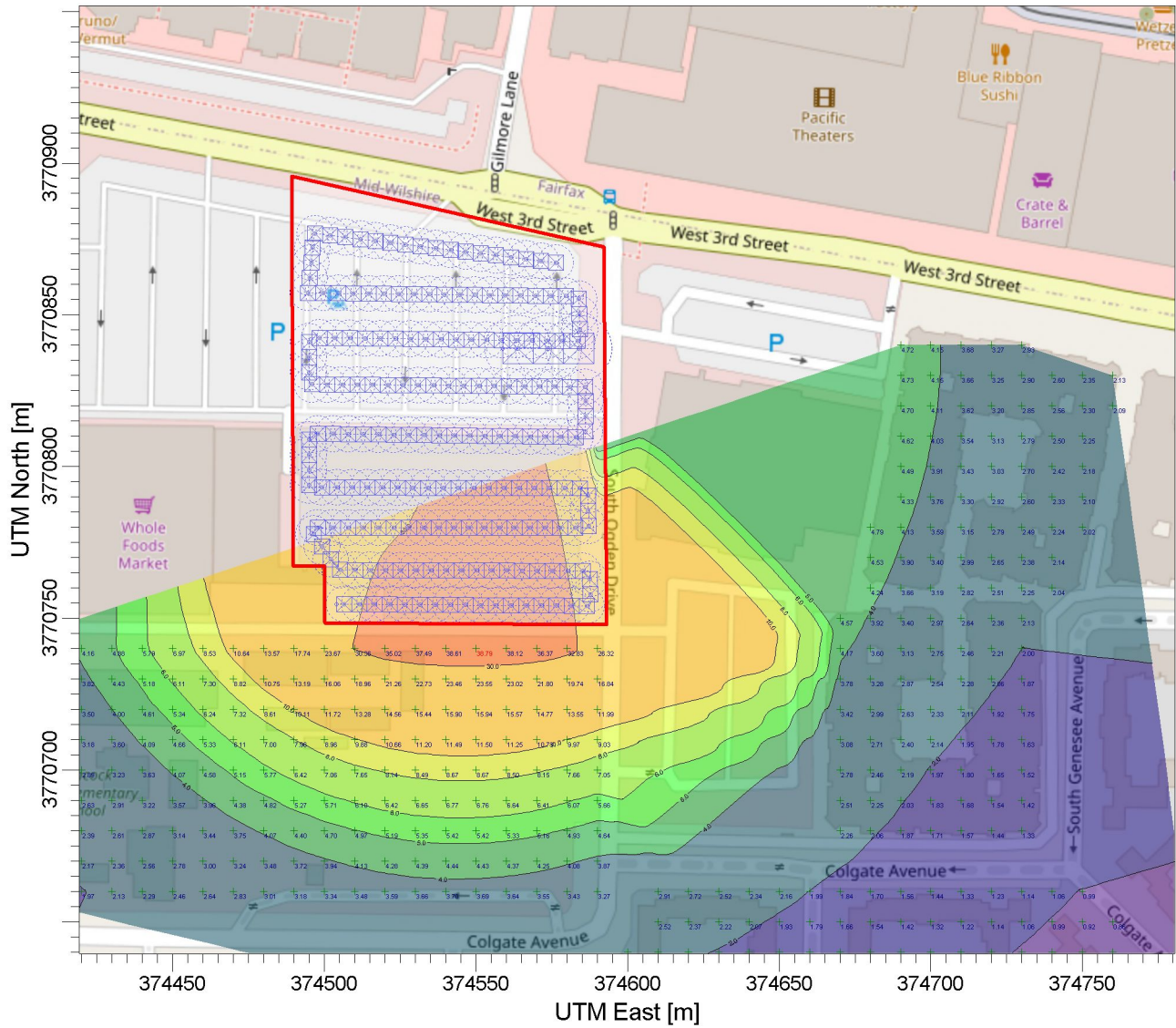
Appendix C



AERMOD Source Receptor Configuration

PROJECT TITLE:

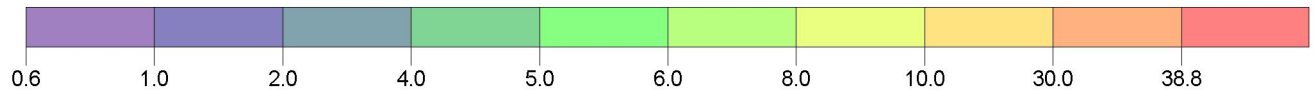
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PLOT FILE OF PERIOD VALUES AVERAGED ACROSS 0 YEARS FOR SOURCE GROUP: DPM

ug/m³

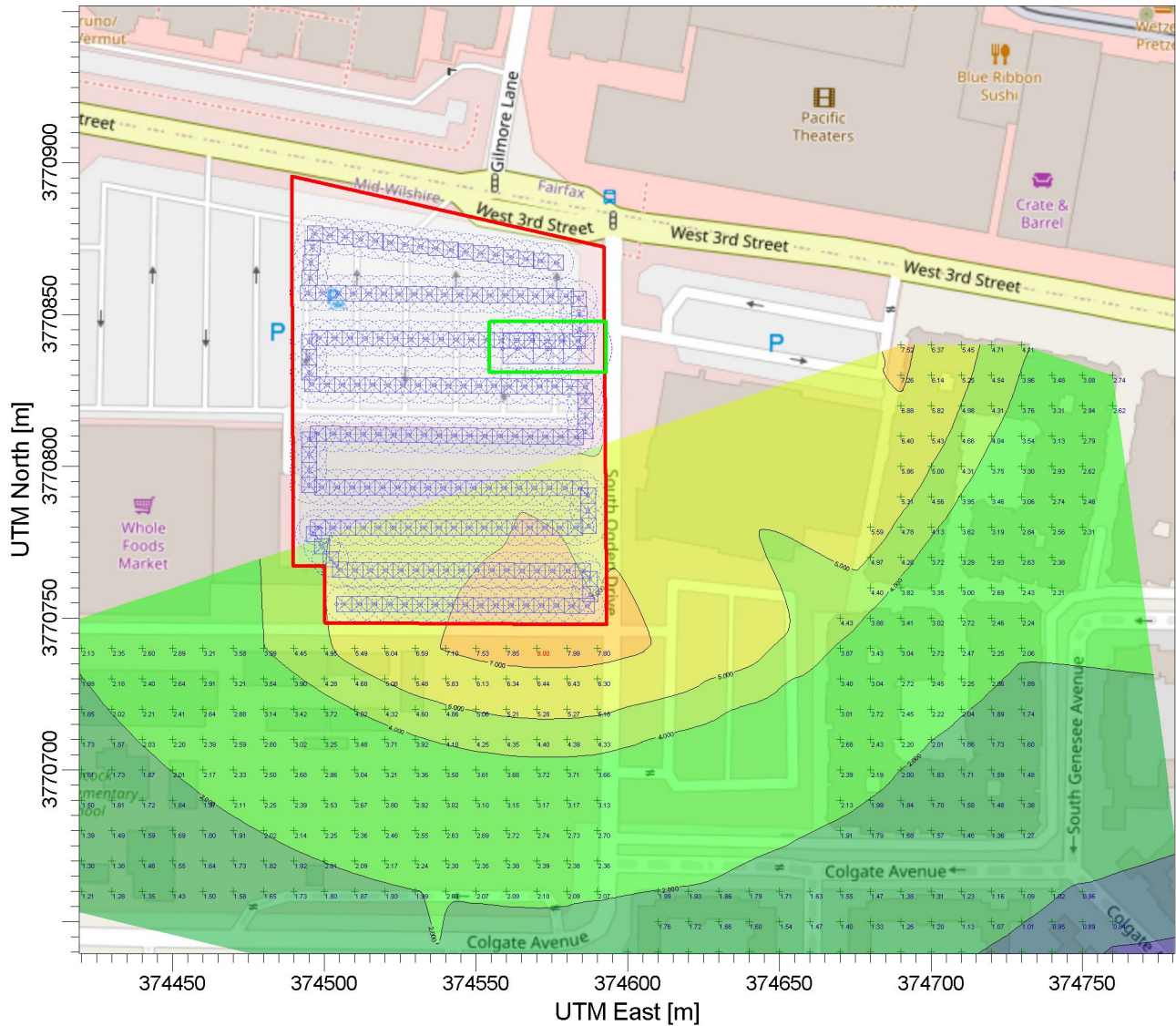
Max: 38.8 [ug/m³] at (374550.00, 3770740.00)



<p>COMMENTS:</p> <p>3rd and Fairfax Source Receptor Configuration - Project Construction</p>	<p>SOURCES:</p> <p>2</p>	<p>COMPANY NAME:</p>	
	<p>RECEPTORS:</p> <p>414</p>	<p>MODELER:</p>	
	<p>OUTPUT TYPE:</p> <p>Concentration</p>	<p>SCALE:</p> <p>1:2,272</p>	
	<p>MAX:</p> <p>38.8 ug/m³</p>	<p>DATE:</p> <p>8/26/2021</p>	

PROJECT TITLE:

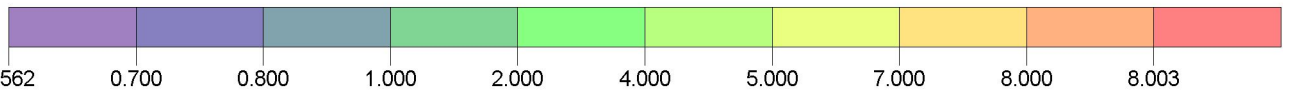
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PLOT FILE OF PERIOD VALUES AVERAGED ACROSS 0 YEARS FOR SOURCE GROUP: LOADING

ug/m³

Max: 8.003 [ug/m³] at (374570.00, 3770740.00)

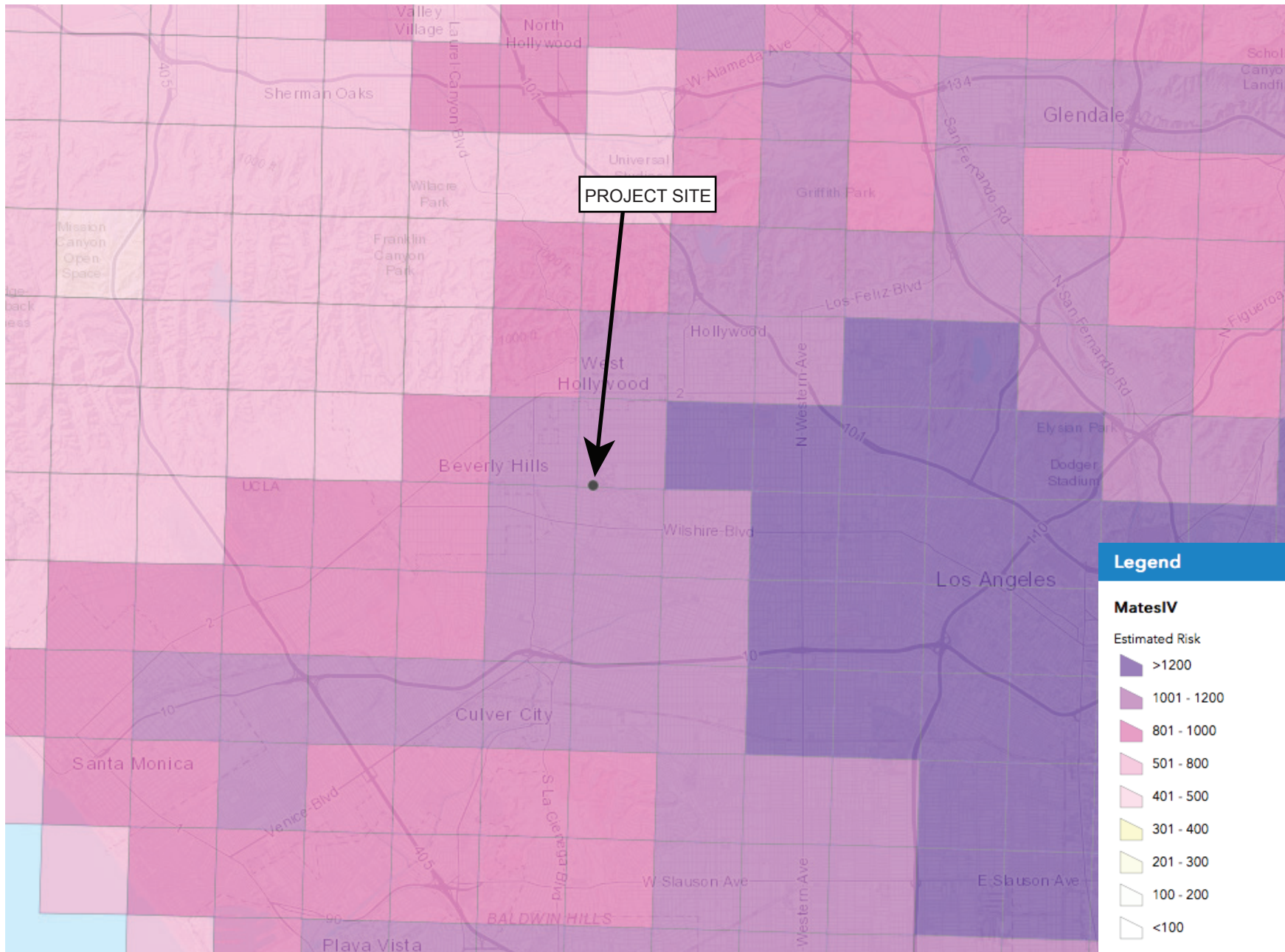


COMMENTS: 3rd and Fairfax Source Receptor Configuration - Loading Dock	SOURCES: 2	COMPANY NAME:		
	RECEPTORS: 414	MODELER:		
	OUTPUT TYPE: Concentration	SCALE: 1:2,272		
	MAX: 8.003 ug/m³	DATE: 8/26/2021		

Appendix D



MATES IV Total Cancer Risk for Project Site
(Figure IV.A-2 of Draft EIR)



Source: SCAQMD, MATES IV Carcinogenic Risk Interactive Map, accessed September 2018.

Figure IV.A-2
MATES IV Total Cancer Risk for Project Site